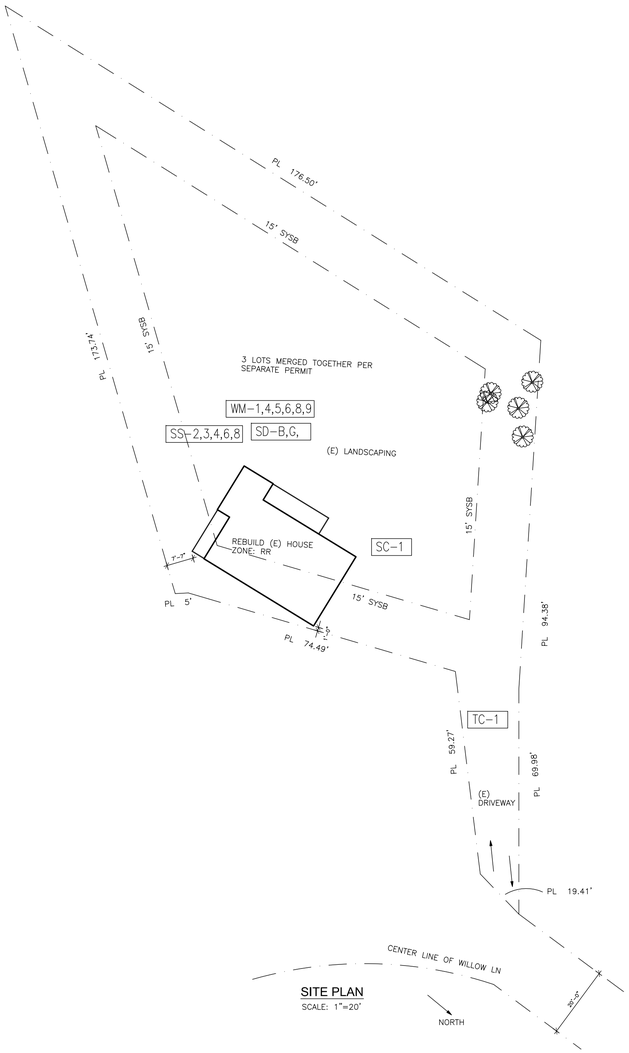
property is connected to electrical grid.
NATURAL GAS

PROPERLY COMPLETED AND SIGNED CERTIFICATES OF INSTALLATION (CF2R FORMS) SHALL BE
PROVIDED TO THE INSPECTOR IN THE FIELD, FOR PROJECTS REQUIRING HERS VERIFICATION. THE CF2R FORMS SHALL BE REGISTERED WITH A CALIFORNIA-APPROVED HERS PROVIDER DATA REGISTRY." CF2R FORMS ARE AVAILABLE AT
HTTP://WWW.SDCOUNTY.CA.GOV/PDS/BLDG/ENERGY-STDS.HTM L (CBEES 10-103)

PROPERLY COMPLETED CERTIFICATES OF VERIFICATION (CF3R FORMS) SHALL BE PROVIDED TO
THE INSPECTOR IN THE FIELD FOR ITEMS REQUIRING HERS VERIFICATION. CF3R FORMS SHALL BE REGISTERED WITH A CALIFORNIA-APPROVED
HERS PROVIDER DATA REGISTRY." CF3R FORMS ARE AVAILABLE AT
HTTP://WWW.SDCOUNTY.CA.GOV/PDS/BLDG/ENERGY-STDS.HTM L (CBEES 10-103)

ALL PROPOSED BUILDINGS, STRUCTURES, ADDITIONS, MODIFICATIONS TO BUILDINGS/STRUCTURES MUST COMPLY WITH THE APPROVED LOCATION, AS SHOWN ON THE COUNTY APPROVED PLOT PLAN. AT THE DISCRETION OF THE COUNTY, THE PROPERTY OWNER MAY BE REQUIRED TO PROVIDE PROOF OF CURRENT PLACEMENT OF EACH PARCEL. THIS MAY INCLUDE A STAMPED AND SIGNED SETBACK CERTIFICATE PREPARED BY A CALIFORNIA LICENSED SURVEYOR OR CIVIL ENGNEER..

ON THE RESIDENCE, PROVIDE CLEARLY VISIBLE ADDRESS NUMBERS WITH 4" TALL LETTERS, WITH A 1/2" MIN STROKE PER CRC R319.



SITE PLAN
SCALE: 1"=20'

"All proposed buildings, structures, additions, modifications to buildings/structures must
comply with the approved location, as shown on the County approved Plot Plan. At the discretion of the County, the property owner may be required to provide proof of current placement of each on the parcel. This may include a stamped and signed setback certificate prepared by a California licensed surveyor or civil engineer. (County Building Code 91.1.107.2)"

Address Numbers shall be a minimum of 4 inches in height with a 1/2" stroke; and shall contrast with the background

(e) paving/driveway: 3000 sf
(e) HOUSE/storage footprint: 1046 sf
total (e) impervious area: 4046 sf
total (n) impervious area: 0 sf
total disturbed area: 1046 sf

no pervious element proposed

SCOPE OF WORK:

REMODEL (E) HOUSE

A.P.N # 1871121300
ADDRESS: 25734 WILLOW LN, ESCONDIDO, CA 92026
CONSTRUCTION TYPE: V-B
ZONING: RS

SITE DATA:
existing lot: 6116 SF
REBUILD existing HOUSE: 900 sf
REBUILD EXISTING DECK: 146 SF

NO LANDSCAPING PROPOSED

occupancy:R-3
Number of stories:1
OWNER: JG FITNESS CORPORATION INC
TEL: 619-558-4944

SHEET INDEX

SOILS:
THE STRUCTURE WILL BE LOCATED ENTIRELY ON NATIVE UNDISTURBED SOIL
IF THE BUILDING INSPECTOR SUSPECTS FILL EXPANSIVE SOILS OR ANY GEOLOGIC INSTABILITY BASED UPON OBSERVATION OF THE FOUNDATION EXCAVATION, A SOILS OR GEOLOGICAL REPORT & RESUBMITTAL OF PLANS TO PLAN CHECK TO VERIFY THAT REPORT RECOMMENDATIONS HAVE BEEN INCORPORATED MAY BE REQUIRED.

THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CODES:

2022 California Residential Code
2022 CALIFORNIA BUILDING CODE

2022 California Electrical Code (CEC)..... Part 3, Title 24, CCR)

2022 California Mechanical Code (CMC)..... (Part 4, Title 24, CCR)

2022 California Plumbing Code (CPC)..... (Part 5, Title 24, CCR)

2022 California Energy Code..... (Part 6, Title 24, CCR)

2022 California Fire Code (CFC)..... (Part 9, Title 24, CCR)

2022 California Referenced Standards Code..... (Part 12, Title 24, CCR)
2022 California Green Building Standards Code (CalGreen)
2022 California Building Energy Efficiency Standards (CBEES)
county of san diego amendments

THE INSPECTOR WILL RECHECK FOR EXPANSIVE SOILS AND/OR GRADING REQUIREMENTS AT FIRST FOUNDATION INSPECTION

SURFACE WATER WILL DRAIN AWAY FROM BUILDING AND SHOW DRAINAGE PATTERN. THE GRADE SHALL FALL A MINIMUM OF 6" WITHIN THE FIRST 10 FEET. IT DOES NOT APPLY WHEN STRUCTURE IS AT 5' FROM PROPERTY LINE

HERS PROVIDER

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• Insulation below roof deck • Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

HERS FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry
• Indoor air quality ventilation • Kitchen range hood • Verified heat pump rated heating capacity

STORM WATER QUALITY NOTES CONSTRUCTION BMPS

THIS PROJECT SHALL COMPLY WITH ALL CURRENT REQUIREMENTS OF THE STATE PERMIT;
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD (SDRWQCI). SAN DIEGO MUNICIPAL
STORM WATER PERMIT. THE CITY OF SAN DIEGO LAND DEVELOPMENT CODE, AND THE STORM
WATER STANDARDS MANUAL.

PRIOR TO ANY SOIL DISTURBANCE, TEMPORARY SEDIMENT CONTROLS SHALL BE INSTALLED BY THE CONTRACTOR OR QUALIFIED PERSON(S) AS INDICATED BELO>

1. ALL REQUIREMENTS OF THE CITY OF SAN DIEGO "STORM WATER STANDARDS MANUAL" MUST BE INCORPORATED INTO THE DESIGN AND CONSTRUCTION OF THE PROPOSED GRADING/IMPROVEMENTS CONSISTENT WITH THE APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND/OR WATER POLLUTION CONTROL PLAN (WPCP) FOR CONSTRUCTION LEVEL BMPS AND. IF APPLICABLE. THE STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) FOR POST-CONSTRUCTION BMPS.

2THE CON I RACTOR SHALL INSTALL AND MAINTAIN ALL STORM DRAIN INLET PROTECTION. INLET PROTECTION IN THI PUBLIC RIGHT-OF-WAY MUST BE TEMPORARILY REMOVED PRIOR TO A RAIN EVENT TO ENSURE NO FLOODING OCCURS F ND REINSTALLED AFTER RAIN IS OVER.

3. ALL CONSTRUCTION BMPS SHALL BE INSTALLED AND PROPERLY MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.

4. THE CONTRACTOR SHALL ONLY GRADE INCLUDING CLEARING AND GRUBBING. AREAS FOR WHICH THE CONTRACTOR OR QUALIFIED CONTACT PERSON CAN PROVIDE EROSION AND SEDIMENT CONTROL MEASURES.

5. TH I CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SUB-CONTRACTORS AND SUPPLIERS ARE AWARE OF ALL STORM WATER BMPS AND IMPLEMENT SUCH MEASURES. FAILURE TO COMPLY WITH THE APPROVED SWPPP/WPCP WILL RESULT IN THE ISSUANCE OF CORRECTION NOTICES. CITATIONS. CIVIL PENALTIES. AND/OR STOP WORK NOTICES.

6. THE CONTRACTOR OR QUALIFI ED CONTACT PERSON SHALL BE RESPONSIBLE FOR CLEANUP OF ALL SILT. DEBRIS. AND MUD ON AFFECTED AND ADJACENT STREET(S) AND WITHIN STORM DRAIN SYSTEM DUE TO CONSTRUCTION VEHICLES/EQUIPMENT AND CONSTRUCTION ACTIVITY AT THE END OF EACH WORK DAY

7. THE CONTRACTOR SHALL PROTECT NEW AND EXISTING STORM WATER CONVEYANCE SYSTEMS FROM SEDIMENTATION. ZONCRETE RINSE. OR OTHER CONSTRUCTION-RELATED DEBRIS AND DISCHARGES WITH THE APPROPRIATE BMPS THAT ARE ACCEPTABLE TO THE CITY RESIDENT ENGINEER AND AS INDICATED IN THE SWPPP/WPCP

8. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL CLEAR DEBRIS . SIL>. AND MUD FROM ALL DITCHES AND SWALES PRIOR TO AND WITHIN 3 BUSINESS DAYS AFTER EACH RAIN EVENT OR PRIOR TO THE NEXT RAIN EVENT. WHICHEVER IS SOONER.

9. IF A NON-STORM WATER DISCHARGE LEAVES THE SITE. THE CONTRACTOR SHALL IMMEDIATELY STOP THE ACTIVITY AND REPAIR THE DAMAGES. THE CONTRACTOR SHALL NOTIFY THE CITY RESIDEN I ENGINEER OF THE DISCHARGE. PRIOR TO RESUMING CONSTRUCTION ACT ITY, ANY AND ALL WASTE MATERIAL, SEDIMEN . AND DEBRIS FROM EACH NON-STORM WATER DISCHARGE SHALL BE REMOVED FROM THE STORM DRAIN CONVEYANCE SYSTEM AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

10. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES. ALL NECESSARY MATE>IALS SHALL BE STOCKPILED ONSITE AT CONVENIEN I LOCATIONS TO FACILITATE RAPID DEPLOYMENT OF CONSTRUCTION BMPS W >EN RAIN IS IMMINENT.

11. THE CONTRACTOR SHALL RESTORE AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL BMPS TO WORKING ORDER YEAR-ROUND

12. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DUE TO UNFORESEEN CIRCUMSTANCES TO PREVENT NON-STORM WATER AND SEDIMENT -LADEN DISCHARGES.

13. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATERS CREATE A HAZARDOUS CONDITION.

14. ALL EROSION AND SEDIMENT CON I ROL MEASURES PROVIDED PER THE APPROVED SWPPP/WPCP SHALL BE INSTALLED AND MAINTAINED. ALL EROSION AND SEDIMEN I CONTROLS FOR INTERIM CONDITIONS SHALL BE PROPERLY DOCUMENTED AND INSTALLED TO THE SATISFACTION OF THE CITY RESIDENT ENGINEER

15. AS NECESSARY, THE CITY RESIDENT ENGINEER SHALL SCHEDULE MEETINGS FOR THE PROJECT TEAM (GENERAL CONTRACTOR, QUALIFIED CONTACT PERSON, EROSION CONTROL SUBCONTRACTOR IF ANY, ENGINEER OF WORK, OWNER/DEVELOPER, AND THE CITY RESIDENT ENGINEER) TO EVALUATE THE ADEQUACY OF THE EROSION AND SEDIMENT CONTROL MEASURES AND OTHER BMPS RELATIVE TO ANTICIPATED CONSTRUCTION ACTIVITIES

16. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL CONDUCT VISUAL INSPECTIONS AND MAINTAIN ALL BMPS DAILY AND AS NEEDED. VISUAL INSPECTIONS AND MAINTENANCE OF ALL BMPS SHALL BE CONDUCTED BEFORE. DURING. AND AFTER EVERY RAIN EVENT AND EVERY 24 HOURS DURING ANY PROLONGED RAIN EVENT. THE CONTRACTOR SHALL MAINTAIN AND REPAIR ALL BMPS AS SOON AS POSSIBLE AS SAFETY ALLOWS.

17. CONSTRUCTION ENTRANCE AND EXIT AREA. TEMPORARY CONSTRUCTION ENTRANCE AND EXITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CASQA FACT SHEET TC-I, OR CALTRANS FACT SHEET TC-01 TO PREVEN I TRACKING OF SEDIMENT AND OTHER POTENTIAL POLLUTANTS ONTO PAVED SURFACES AND TRAVELED WAYS. WIDTH SHALL BE 10'OR THE MINIMUM NECESSARY TO ACCOMMODATE VEHICLES AND EQUIPMENT WITHOUT BY-PASSING THE ENTRANCE. (A) NON-STORM WATER DISCHARGES SHALL BE EFFECTIVELY MANAGED PER THE SAN DIEGO MUNICIPAL CODE CHAPTER 4. ARTICLE 3. DIVISION 3"STORM WATER MANAGEMENT AND DISCHARGE CONTROL"

BMP LEGEND

PDS 659 BROW DITCH
PDS 659 BERM B
DIRECTION OF LOT DRAINAGE

MATERIALS & WASTE MANAGEMENT BMPs:
WM-1 MATERIAL DELIVERY & STORAGE
WM-4 SPILL PREVENTION AND CONTROL
WM-8 CONCRETE WASTE MANAGEMENT
WM-5 SOLID WASTE MANAGEMENT
WM-9 SANITARY WASTE MANAGEMENT
WM-6 HAZARDOUS WASTE MANAGEMENT

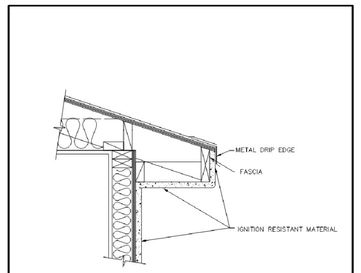
TEMPORARY RUNOFF CONTROL BMPs:
SS-2 PRESERVATION OF EXISTING VEGETATION PEV PEV
SS-3 BONDED OR STABILIZED FIBER MATRIX (WINTER) M M
SS-4 HYDROSEEDING (SUMMER) TSP TSP
SS-6 / SS-8 STRAW OR WOOD MULCH S/W S/W
SS-7 PHYSICAL STABILIZATION (WINTER) EBM EBM
SS-10 ENERGY DISSIPATOR
SC-1 SILT FENCE
SC-2 / PDS 659 SEDIMENT / DESILTING BASIN
SC-5 FIBER ROLLS FR FR
SC-6 / SC-8 GRAVEL OR SAND BAGS
SC-7 STREET SWEEPING AND VACUUMING
SC-10 STORM DRAIN INLET PROTECTION
NS-2 DEWATERING FILTRATION DW DW
TC-1 STABILIZED CONSTRUCTION ENTRANCE
TC-2 CONSTRUCTION ROAD STABILIZATION
TC-3 ENTRANCE / EXIT TIRE WASH

BASELINE BMPs FOR EXISTING AND PROPOSED SITE FEATURES
SD-B DIRECT RUNOFF TO PERVIOUS AREAS
SD-C INSTALL GREEN ROOF
SD-E INSTALL RAIN BARRELS
SD-G CONSERVE NATURAL FEATURES
SD-H PROVIDE BUFFERS AROUND WATER BODIES
SD-I CONSTRUCT SURFACES FROM PERMEABLE MATERIALS
SD-K SUSTAINABLE LANDSCAPING

BASELINE BMPs FOR POLLUTANT-GENERATING SOURCES
SC-A OVERHEAD COVERING
SC-B SEPARATION OF FLOWS FROM ADJACENT AREAS
SC-C WIND PROTECTION
SC-D SANITARY SEWER
SC-E CONTAINMENT SYSTEM

POTENTIAL RUNOFF POLLUTANTS:
A TRASH & REFUSE STORAGE
B MATERIALS & EQUIPMENT STORAGE
C LOADING & UNLOADING
D FUELING
E MAINTENANCE & REPAIR
F VEHICLE & EQUIPMENT CLEANING
G OTHER

NOTE:
THIS IS A SAMPLE ONLY. SEE COUNTY OF SAN DIEGO STORMWATER BEST MANAGEMENT PRACTICES - REFERENCE GUIDE (PUBLICATION PDS 143) FOR ALTERNATE STORMWATER MEASURES. YOUR PROJECT MAY NOT USE ALL OF THE BMP MEASURES SHOWN OR MAY REQUIRE ALTERNATE / ADDITIONAL BMP TYPES GIVEN PROJECT SPECIFICS.

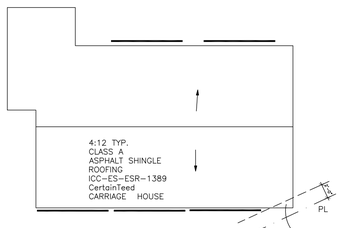


DATE: 01-01-2020	DETAIL 1
SCALE: NONE	
FORM: PDS 196	FASCIA PROTECTED
2 OF 6 SHEETS	

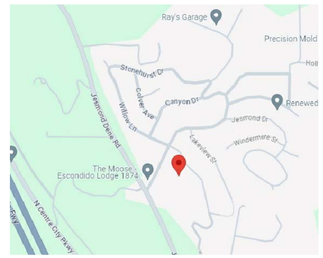
In roof coverings where the profile creates space between the roof covering and combustible roof decking.
PROVIDE Fire-stopping with approved materials (e.g., non-combustible birdstops for curved tile)

VENTED RAFTER AREA : 900 SF, REQUIRED VENT : 900/150=6 SF=864 SI
PROVIDED SOFFIT VENT : 6 SF
BRANDGUARD
CS2021-FF 5.5"w x 120"l, NFVA 177 SI, total 5 provided

NFVA: 177X5=885 si=6 sf provided



ROOF PLAN
SCALE: 1"=10'



VICINITY MAP
NORTH

PROJECT TITLE
REBUILD HOUSE
25734 WILLOW LN, ESCONDIDO, CA 92026

NO.	REVISIONS	DATE	NO.	REVISIONS	DATE

DRAWING TITLE
PROJECT DATA/ SITE PLAN

DESIGNED	PROJECT NO. Project Number
DRAWN Prod. Team	SCALE
CHECKED QC	DRAWING NO. A-1
DATE Submittal Date	OF --

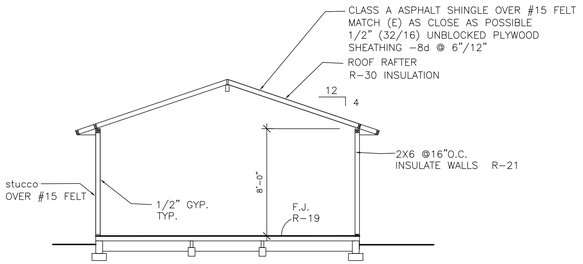
WATER CLOSET CLR DETAIL

WALL LEGEND:

EXISTING WALL:

NEW WALL:

1 HR RATED WALL



1 BUILDING SECTION

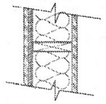
SCALE: 3/16"=1'-0"

WINDOWS U VALUE: 0.30
SHGC: 0.23
RADIANT BARRIER IS
REQUIRED FOR NEW ROOF
AREA

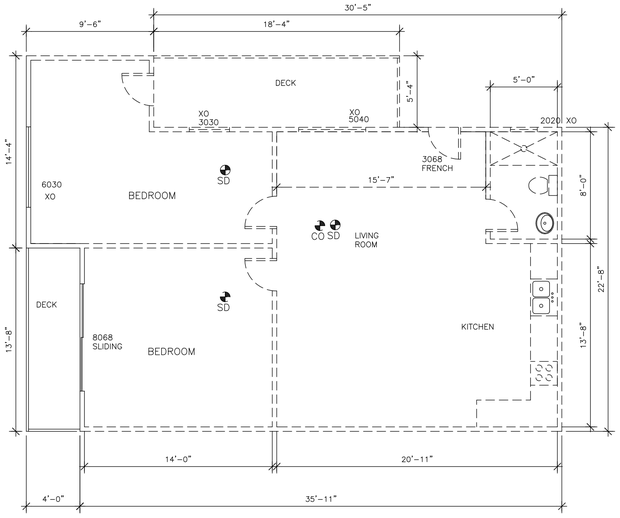
WOOD STUDS, CEMENT STUCCO, WIRE MESH, GYPSUM WALLBOARD

EXTERIOR SIDE: **Base** layer **15/32"** wood structural panels applied parallel to 2 x 4 wood studs **16"** o.c. with 10d galvanized nails **6"** o.c. at edges and at top and bottom plates and **12"** o.c. at intermediate studs. Weather resistive barrier applied over panels. Galvanized self-furring wire mesh applied over sheathing with 8d galvanized roofing nails, **23/8"** long, 0.113" shank. **9/32"** heads, **6"** o.c. Cement-stucco applied over wire mesh in two **1/2"** thick coats with bonding agent applied between coats.

INTERIOR SIDE: One layer **5/8"** proprietary type X gypsum wallboard applied parallel or at right angles to studs with either 6d cement coated nails, **17/8"** long **7"** o.c. or **17/8"** long Type S or Type W drywall screws **8"** o.c. 3" mineral fiber insulation, 3.0 pcf, friction fit in stud space. **(LOAD-BEARING)**



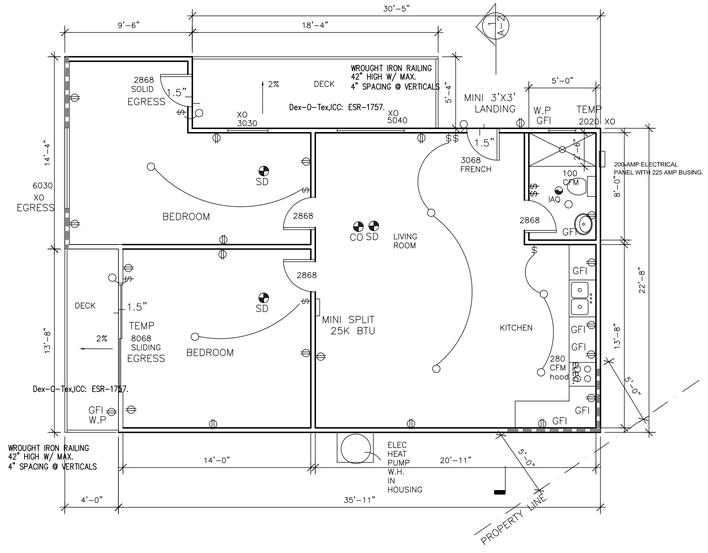
2 1-HR EXT WALL SPEC (UL U356)



EXISTING FLOOR PLAN

3/16"=1'-0"

NORTH



PROPOSED FLOOR PLAN

3/16"=1'-0"

ELECTRICAL LEGEND

- ELECTRICAL OUTLET
- HALF-HOT OUTLET (SWITCHED)
- GFI OUTLET
- TELEVISION CABLE OUTLET
- TELEPHONE JACK
- ETHERNET
- SWITCH
- 3-WAY SWITCH
- DIMMER SWITCH
- WALL MOUNTED LIGHT HIGH EFFICACY
- WALL SCONCE HIGH EFFICACY
- HIGH EFFICACY CEILING LIGHT
- RECESSED LIGHT
- JUNCTION BOX
- VENT FAN
- VENT FAN/ HEAT LIGHT
- FLOOD LIGHT
- SMOKE DETECTOR
- CEILING FAN
- FLUORESCENT FIXTURE
- CO CARBON MONOXIDE ALARM
- D DIMMER
- V.S. VACANCY SENSOR

46, EXTERIOR DOORS COMPLYING WITH ONE OF THE FOLLOWING (COUNTY BUILDING CODE 92.L.708A.3):

a. EXTERIOR SURFACE OR CLADDING OF NONCOMBUSTIBLE OR APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD.

b. SOLID-CORE WOOD MINIMUM 1 -3/8 INCHES THICK COMPLYING WITH THE FOLLOWING:

1. STILES AND RAILS MINIMUM 1-3/8 INCHES THICK.
2. RAISED PANELS MINIMUM 1-1/4 INCHES THICK.

EXCEPTION: EXTERIOR PERIMETER OF RAISED PANEL MAY TAPER TO A TONGUE MINIMUM 3/8 INCHES THICK.

c. MINIMUM 20-MINUTE FIRE-RESISTANCE-RATED WHEN TESTED PER NFPA 252.

d. MEET PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-1.

47,: PAPER-FACED INSULATION PROHIBITED IN ATTICS OR OTHER VENTILATED SPACES. (COUNTY BUILDING CODE 92.L.711A.L

48, : PAINTS, COATINGS, STAINS, OR OTHER SURFACE TREATMENTS ARE NOT ACCEPTABLE MEANS OF COMPLIANCE WITH ANY WILDFIRE-RESISTIVE CONSTRUCTION REQUIREMENT. (COUNTY BUILDING CODE 92.1.703.4)

49, A MINIMUM OF 65 PERCENT OF THE NONHAZARDOUS CONSTRUCTION WASTE GENERATED AT THE SITE IS DIVERTED TO RECYCLE OR SALVAGE PER SECTION 4.408.1

50, BEFORE FINAL INSPECTION, A COMPLETE OPERATION AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OCCUPANT OR OWNER. CONTRACTOR OR OWNER SHALL SUBMIT AN AFFIDAVIT THAT CONFIRMS THE DELIVERY OF SUCH. (SECTION 4.410.1)

51, BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHALL NOT BE INSTALLED. WALLS AND FLOORS FARMING SHALL NOT BE ENCLOSED WHEN FRAMING MEMBERS EXCEED 19% MOISTURE CONTENT. (SECTION 4.505.3)

52, : THE MOISTURE CONTENT OF BUILDING MATERIAL USED IN WALLS AND FLOOR FRAMING IS CHECKED BEFORE ENCLOSURE. MOISTURE CONTENT SHALL BE VERIFIED BY EITHER A PROBE TYPE OR CONTACT TYPE MOISTURE METER. (SECTION 4.505.3).

53, **ESS READY:** ALL SINGLE-FAMILY RESIDENCES THAT INCLUDE ONE OR TWO DWELLING UNITS SHALL MEET THE FOLLOWING. ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE: AT LEAST ONE OF THE FOLLOWING SHALL BE PROVIDED:

ESS READY INTERCONNECTION EQUIPMENT WITH A MINIMUM BACKED-UP CAPACITY OF 60 AMPS AND A MINIMUM OF FOUR ESS-SUPPLIED BRANCH CIRCUITS, OR

A DEDICATED RACEWAY FROM THE MAIN SERVICE TO A PANELBOARD (SUBPANEL) THAT SUPPLIES THE BRANCH CIRCUITS IN SECTION 150.0(S)(2). AU BRANCH CIRCUITS ARE PERMITTED TO BE SUPPLIED BY THE MAIN SERVICE PANEL PRIOR TO THE INSTALLATION OF AN ESS. THE TRADE SIZE OF THE RACEWAY SHALL BE NOT LESS THAN ONE INCH. THE PANELBOARD THAT SUPPLIES THE BRANCH CIRCUITS (SUBPANEL) MUST BE LABELED "SUBPANEL SHALL INCLUDE ALL BACKED-UP LOAD CIRCUITS."

- A MINIMUM OF FOUR BRANCH CIRCUITS SHALL BE IDENTIFIED AND HAVE THEIR SOURCE OF SUPPLY COLLOCATED AT A SINGLE PANELBOARD SUITABLE TO BE SUPPLIED BY THE ESS. AT LEAST ONE CIRCUIT SHALL SUPPLY THE REFRIGERATOR, ONE LIGHTING CIRCUIT SHALL BE LOCATED NEAR THE PRIMARY EGRESS, AND AT LEAST ONE CIRCUIT SHALL SUPPLY A SLEEPING ROOM RECEPTACLE OUTLET.

- THE MAIN PANELBOARD SHALL HAVE A MINIMUM BUSBAR RATING OF 225 AMPS.
- SUFFICIENT SPACE SHALL BE RESERVED TO ALLOW FUTURE INSTALLATION OF A SYSTEM ISOLATION EQUIPMENT/TRANSFER SWITCH WITHIN 3 FEET OF THE MAIN PANELBOARD. RACEWAYS SHALL BE INSTALLED BETWEEN THE PANELBOARD AND THE SYSTEM ISOLATION EQUIPMENT/TRANSFER SWITCH LOCATION TO ALLOW THE CONNECTION OF BACKUP POWER SOURCE.

55, ALL SERVICES SUPPLYING DWELLING UNITS SHALL BE PROTECTED WITH A SURGE PROTECTION DEVICE **(SPD),** THE SPD SHALL BE AN INTEGRAL PART OF THE SERVICE EQUIPMENT OR SHALL BE LOCATED INNNEDIATELY ADJACENT TO. THE SPD SHALL BE A TYPE 1 OR TYPE 2 SPD. WHERE SERVICE EQUIPMENT IS REPLACED, ALL OF THE REQUIREMENTS OF SECTION CEC 260.37 SHALL APPLY.

56, **EXTERIOR EMERGENCY DISCONNECT:** ALL ONE- AND TWO-FAMILY DWELLING UNIT SERVICE CONDUCTORS SHALL TERMINATE IN DISCONNECTING MEANS HAVING A SHORT CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT, INSTALLED IN A READILY ACCESSIBLE OUTDOOR LOCATION. IF MORE THAN ONE DISCONNECTS, THEY SHALL BE GROUPED. CEC 230.85

- SERVICE DISCONNECTS SHALL BE MARKED AS FOLLOWS: EMERGENCY DISCONNECT, SERVICE DISCONNECT.
- METER DISCONNECTS INSTALLED PER 230.82(3) AND MARKED AS FOLLOWS: EMERGENCY DISCONNECT, METER DISCONNECT, NOT SERVICE EQUIPMENT.
- OTHER LISTED DISCONNECT SWITCHES OR CIRCUIT BREAKERS ON THE SUPPLY SIDE OF EACH SERVICE DISCONNECT THAT ARE SUITABLE FOR USE AS SERVICE EQUIPMENT AND MARKED AS FOLLOWS: EMERGENCY DISCONNECT, NOT SERVICE EQUIPMENT. MARKINGS SHALL COMPLY WITH 110.21 (B).

57, : **ELECTRIC COOKTOP READY,** SYSTEMS USING GAS OR PROPANE COOKTOP TO SERVE INDIVIDUAL DWELLING UNITS SHALL INCLUDE THE FOLLOWING:

- A DEDICATED 240-VOLT BRANCH CIRCUIT WIRING SHALL BE INSTALLED WITHIN 3 FEET FROM THE COOKTOP AND ACCESSIBLE TO THE COOKTOP WITH NO OBSTRUCTIONS. THE BRANCH CIRCUIT CONDUCTORS SHALL BE RATED AT 50 AMPS MINIMUM. THE BLANK COVER SHALL BE IDENTIFIED AS "240V READY." ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE.
- THE MAIN ELECTRICAL SERVICE PANEL SHALL HAVE A RESERVED SPACE TO ALLOW FOR THE INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER FOR A FUTURE ELECTRIC COOKTOP INSTALLATION. THE RESERVED SPACE SHALL BE PERMANENTLY MARKED AS "FOR FUTURE 240V USE."

Exception: Hallways

. Outdoor lighting permanently mounted to building shall be controlled by one of the following:

- Photocontrol and motion sensor
- Photocontrol and automatic time-switch control
- Astronomical time clock

27,AUTOMATIC IRRIGATION SYSTEMS CONTROLLERS INSTALLED AT THE TIME OF FINAL INSPECTION SHALL BE WEATHER- BASED.

28,ALL WATER CLOSETS SHALL HAVE AN EFFECTIVE FLUSH VOLUME OF NOT MORE THAN 1.28 GALLONS PER FLUSH. TANK TYPE WATER CLOSET SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR TANK-TYPE TOILETS. URINALS, SHALL HAVE AN EFFECTIVE FLUSH VOLUME NOT TO EXCEED 0.5 GALLONS PER FLUSH

29,FAUCETS, RESIDENTIAL LAVATORY FAUCETS SHALL HAVE A MAXIMUM RATE OF 1.2 GALLONS PER MINUTE AT 60 PSI AND A MINIMUM FLOW RATE OF NOT LESS THAN 0.8 GALLONS PER MIN. AT 20 PSI.
FAUCET IN COMMON AND PUBLIC USE AREAS (OUTSIDE OF DWELLINGS OR SLEEPING UNITS) IN RESIDENTIAL BUILDINGS MUST HAVE A MAXIMUM FLOW RATE OF 0.5 GALLONS PER MINUTE AT 60 PSI.
METERING FAUCETS WHEN INSTALLED IN RESIDENTIAL BUILDINGS MUST NOT DELIVER MORE THAN 0.25 GALLONS PER CYCLE.

30, A PLUMBING FIXTURE CERTIFICATION MUST BE COMPLETED AND SIGNED BY EITHER A LICENSED GENERAL CONTRACTOR, OR A PLUMBING SUBCONTRACTOR, OR THE BUILDING OWNER CERTIFYING THE FLOW RATE OF THE FIXTURES INSTALLED. A COPY OF THE CERTIFICATION CAN BE OBTAINED FROM THE DEVELOPMENT SERVICES DEPARTMENT

31,JOINTS AND OPENINGS, ANNULAR SPACES AROUND PIPES, ELECTRIC CABLES, CONDUITS, OR OTHER OPENINGS IN PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR SIMILAR METHOD ACCEPTABLE TO THE ENFORCING AGENCY

32,A MINIMUM OF 65 PERCENT OF THE CONSTRUCTION WASTE GENERATED AT THE SITE IS DIVERTED TO RECYCLE OR SALVAGE PER SECTION 4.408.1 AND CITY ORDINANCE

33, BEFORE FINAL INSPECTION, A COMPLETE OPERATION AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OCCUPANT OR OWNER. CONTRACTOR OR OWNER SHALL SUBMIT AN AFFIDAVIT THAT CONFIRMS THE DELIVERY OF SUCH. (SECTION 4.410.1)". A SAMPLE OF THE MANUAL IS AVAILABLE ON THE HOUSING AND COMMUNITY DEVELOPMENT (HCD) WEB SITE

34, LIGHTING IN BATHROOMS SHALL HAVE ALL HIGH EFFICACY LUMINAIRE AND AT LEAST ONE LUMINAIRE MUST BE CONTROLLED BY A VACANCY SENSOR.

35 , not used

36, ALL PLUMBING FIXTURES AND FITTINGS WILL BE WATER CONSERVING AND WILL COMPLY WITH THE 2022 CGBSC"

37, PROVIDE LAVATORY FAUCETS WITH A MAXIMUM FLOW OF 1.2 GALLONS PER MINUTE

38, EXHAUST DUCTS AND DRYER VENTS SHALL BE EQUIPPED WITH BACK DRAFT DAMPERS.

39, VENTS PROHIBITED IN EAVES, EAVE OVERHANGS, SOFFITS, OR CORNICES. (COUNTY BUILDING CODE 92.1.706A.2)
EXCEPTION: APPROVED VENTS RESISTING INTRUSION OF FLAMES AND EMBERS
EXCEPTION: GABLE-END VENTS ALLOWED IF LOCATED MINIMUM 12 INCHES BELOW LOWEST EAVE/RAKE PROJECTION
EXCEPTION: AS ALLOWED BY BUILDING OFFICIAL AND LOCAL FIRE AUTHORITY AND PER EAVE DETAILS IN FORM PDS #198

40, exterior windows, exterior glazed doors, glazed openings within exterior doors, glazed openings within exterior garage doors, and exterior structural glass veneer complying with one of the following:
(County Building Code 92.1.70BA.2): Note: Please update notes.
Multi-pane glazing with a minimum of one tempered pane meeting the requirements of Section 2408 Safety
Glazing, and where any glazing frames made of vinyl materials shall have welded corners, metal
reinforcement in interlock area, and be certified to AAMAWDMA/CSA 101/I.S.2/A440

41, EXTERIOR DOORS COMPLYING WITH ONE OF THE FOLLOWING. (COUNTY BUILDING CODE 92.1.708A.3):

b, Solid-core wood minimum 1 -3/8 inches thick complying with the following:
1. Stiles and rails minimum 1-3/8 inches thick.
2. Raised panels minimum 1-1/4 inches thick

Exception: Exterior perimeter of raised panel may taper to a tongue minimum 3/8 inches thick.

42, Paper-faced insulation prohibited in attics or other ventilated spaces. (County Building Code 92.1.711A.1)

43, plans: Paints, coatings, stains, or other surfece treatments are not acceptable means of compliance with any wildfire-resistive construction requirement. (County Building Code 92.1.703.4)

44, BATHROOM EXHAUST FANS SHALL BE HUMIDITY CONTROLLED PER CMC CHAPTER 4 AND CALIFORNIA GREEN BUILDING STANDARDS CODE CHAPTER 4, DIVISION 4.5

45, EXTERIOR WINDOWS, EXTERIOR GLAZED DOORS, GLAZED OPENINGS WITHIN EXTERIOR DOORS, GLAZED OPENINGS WITHIN EXTERIOR GARAGE DOORS, AND EXTERIOR STRUCTURAL GLASS VENEER COMPLYING WITH ONE OF THE FOLLOWINQ (COUNTY BUILDING CODE 92.L.708A,2):

a. MULTI-PANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF SECTION 2406 SAFETY GLAZING, AND WHERE ANY GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED COMERS, METAL REINFORCEMENT IN INTERLOCK AREA, AND BE CERTIFIED TO AAMA/WDMA/CSA 101/1. S.2/A440.

b. MINIMUM 20-MINUTE FIRE-RESISTANCE-RATED (PROVIDE LISTING OR TEST REPORT)

c. MEET PERFORMANCE REQUIREMENTS OFSFM STANDARD 12-7A-2

NOTE:
1, IN SHOWERS AND TUB-SHOWER COMBINATIONS, CONTROL VALVES MUST BE PRESSURE BALANCED OR THERMOSTATIC MIXING VALVES. 1.8 GPM.

2, NEW WATER CLOSET AND ASSOCIATED FLUSHMETER VALVES, SHALL USE NO MORE THAN 1.28 GALLONS PER FLUSH AND SHALL MEET PERFORMANCE STANDARD'S ESTABLISHED BY ANSI STANDARD A112.19.2

3,
o) IN BATHROOMS, GARAGES, LAUNDRY ROOMS, AND UTILITY ROOMS ALL FIXTURES MUST BE HIGH EFFICACY STYLE OR BE CONTROLLED BY A MANUALLY-ON OCCUPANCY SENSOR.
NOTE: GENERALLY A HIGH EFFICACY STYLE OF FIXTURE IS FLUORESCENT COMPLETE WITH ELECTRONIC BALLASTS. REGULAR INCANDESCENT, QUARTZ HALOGEN AND HALOGEN MR LAMPS DO NOT COMPLY.

4, ALL ABS AND PVC PIPING AND FITTINGS SHALL BE ENCLOSED WITHIN WALLS AND FLOORS COVERED WITH TYPE X GYP. BD. OR SIMILAR ASSEMBLIES THAT PROVIDES THE SAME LEVEL OF FIRE PROTECTION.
PROTECTION OF MEMBRANCE PENETRATIONS IS NOT REQUIRED.

5, SMOKE ALARM WILL BE INSTALLED ACCORDING TO THE 2022 CRC SECTION R314

6, CARBON MONOXIDE ALARMS WILL BE INSTALLED ACCORDING TO THE 2022 CRC SECTION 315

7, TAMPER RESISTANT RECEPTACLES ARE REQUIRED EVERYWHERE IN DWELLING UNITS PER THE 2022 CEC ARTICLE 406.11 TAMPER RESISTANT RECEPTABLES IN DWELLING UNITS.

8, PLUMBING FIXTURES MUST MATCH THE CURRENT 2022 CPC SECTION 402 WATER-CONSERVING FIXTURES AND FITTINGS.

9, NOT USED

10,Bathtub and shower floors and walls above bathtubs with installed shower heads and in shower compartments shall be finished with a nonabsorbent surface. Such wall surfaces shall extend to a height of not less than 6 feet above the floor.

11,provide landing fo all exterior doors , The minimum depth is 36"; the minimum width is equal to the width of the door; and the maximum drop is 7 ½" Exterior landings shall have a slope not to exceed ¼ units vertical in 12 units horizontal (2-percent).

12,All smoke alarms shall be listed in accordance with UL 217 and installed in accordance with the provisions of the governing CRC and the household fire warning equipment
provisions of NFPA 72, Systems and components shall be California State Fire Marshal listed and approved in
accordance with CCR, Title 19, Division 1 for the purpose for which they are installed.

13,Single- and multiple-station carbon monoxide alarms shall be listed as complying with the requirements of UL 2034. Carbon monoxide detectors shall be listed as complying
with the requirements of UL 2075.

14,where more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the activation of one
alarm will activate all of the alarms in the individual unit

15,Where more than one carbon monoxide alarm Is required to be installed within the dwelling
unit or within a sleeping unit the alarm shall be interconnected in a manner that activation of one alarm shall
activate all of the alarms in the individual unit.

16,Smoke alarms shall receive their primary power from the building wiring provided that such wiring Is served from a commercial source and shall be equipped with a battery back-up, Smoke alarms
with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical
system. Smoke alarms shall emit a signal when the batteries are low

17, Carbon monoxide alarms shall receive
their primary power from the building wiring where such wiring Is served from a commercial source and shall be
equipped with a battery back-up. Alarm wiring shall be directly connected to the permanent building wiring
without a disconnecting switch other than as required for overcurrent protection

18, Provide lavatory faucets with a maximum flow of 1.2 gallons per minute (GPM).

19,Provide shower heads with a maximum flow of 1.8 gallons per minute (GPM)

20, Permanent vaccum breakers shall be included with all new hose bibbs.

21, Provide ultra low flush toilets

22,Provide 5 air changes per hour for bathroom and laundry room ventilation.

24, all Plumbing Fixtures and Fittings will be water conserving and will comply with the 2022
CGBSC Sec. 4.303.1

25,PER 2022 CGBSC, PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE (CPC).

26,PER 2016 GREEN CODE, MECHANICAL EXHAUST FANS WHICH EXHAUST DIRECTLY FROM BATHROOMS SHALL COMPLY WITH THE FOLLOWING:
1. FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING.
2. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDISTAT WHICH SHALL BE READILY ACCESSIBLE. HUMIDISTAT CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN
A RELATIVE HUMIDITY RANGE OF 50 TO 80 PERCENT."

26, Proposed design shall comply with the following lighting measures:
a. Mandatory (CBEES 1S0.0(k)):
o All luminaires shall be high-efficacy in accordance with CBEES Table 150.0-A
. All LED luminaires and lamps shall be marked "JA8-2019" and listed in the California Energy Commission
database at
https://cacertappliances.energy.ca.gov/Pages/ApplianceSearch.aspx
o All recessed downlight and enclosed luminaires shall be
marked "JA8-2019-E" and listed in the California
Energy Commission database at
https://cacertappliances.energy.ca.gov/Pages/ApplianceSearch.aspx
. Recessed downlight luminaires in ceilings shall not be screw-based
o Bathrooms, garages, laundry rooms, and utility rooms: At least one luminaire in each space shall be controlled
by a vacancy sensor
o All luminaires requiring "JA8-2019" or "JA8-2019-E" marking shall be controlled by a dimmer or vacancy
sensor
Exception: Closets less than 70 s. f.

PROJECT TITLE

REBUILD HOUSE

25734 WILLOW LN, ESCONDIDO, CA 92026

NO.	REVISIONS	DATE	NO.	REVISIONS	DATE

DRAWING TITLE

FLOOR PLANS

DESIGNED	PROJECT NO. Project Number
DRAWN Prod. Team	SCALE
CHECKED QC	DRAWING NO. A-2
DATE Submittal Date	OF --

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC 400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b)	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.
§ 110.7	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a)	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g)	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i)	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j)	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a)	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling, or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration, as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b)	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c)	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d)	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor of 0.037 maximum U-factor. *
§ 150.0(f)	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(o)	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45, or area-weighted average U-factor of all fenestration must not exceed 0.46. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.
§ 150.0(e)3	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0 § 110.3	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a)	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-H *
§ 110.2(b)	**Controls for Heat Pumps with Supplementary Electric Resistance Heating.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating. *
§ 110.2(k)	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

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2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour), and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual, or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(j)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 26" x 2.5' x 2' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2' higher than the base of the water heater.
§ 150.0(j)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.6(g)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher, ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", if mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)9	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9	**Protection of Insulation.** Insulation must be protected from damage due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

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§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small ducted high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality.** All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per § 150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed and controlled per § 150.0(o)1EiiiGiv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with § 150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses.** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1GiiI.
§ 150.0(o)1G	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of § 150.0(o)1GiiI; enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting § 150.0(o)1GiiiIv. Airflow must be measured by the installer per § 150.0(o)1Giv, and rated for sound per § 150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by § 150.0(o)1C.
§ 150.0(o)2	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per § 150.0(o)1G.

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDBS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k) 1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k) 1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k) 1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k) 1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k) 1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k) 1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).

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2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(k) 1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k) 1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k) 1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinets or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k) 2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k) 2B	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k) 2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k) 2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k) 2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(j) 2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(j) 2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(j) 2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(j) 2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(j) 3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control, or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(j) 4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(j)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§ 110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area need not be contiguous but shall not be composed of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. *
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

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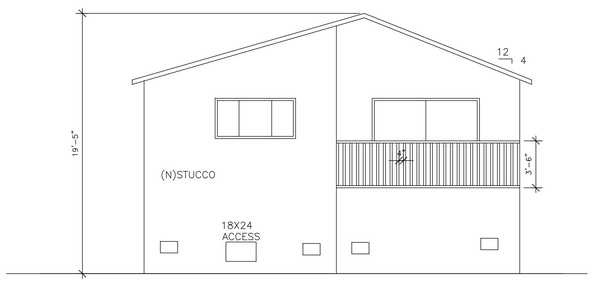
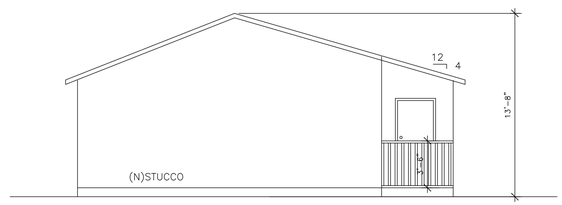
2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits; or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready," and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready," and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use"
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready," and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

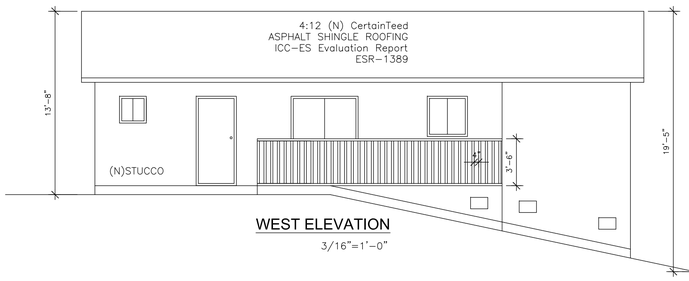
*Exceptions may apply.



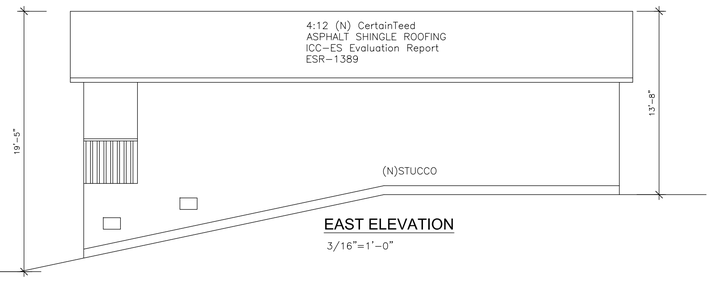
SOUTH ELEVATION
3/16"=1'-0"



NORTH ELEVATION
3/16"=1'-0"



WEST ELEVATION
3/16"=1'-0"



EAST ELEVATION
3/16"=1'-0"

PROJECT TITLE

REBUILD HOUSE

25734 WILLOW LN, ESCONDIDO, CA 92026

NO.	REVISIONS	DATE	NO.	REVISIONS	DATE

DRAWING TITLE

NOTES

DESIGNED	PROJECT NO. Project Number
DRAWN Prod. Team	SCALE
CHECKED QC	DRAWING NO. A-3
DATE Submittal Date	OF --

GENERAL INFORMATION					
01	**Project Name**	REMODEL HOUSE			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	25734 WILLOW LN			
04	**City**	ESCONDIDO	05	**Standards Version**	2022
06	**Zip code**	92026	07	**Software Version**	EnergyPro 9.3
08	**Climate Zone**	10	09	**Front Orientation (deg/ Cardinal)**	270
10	**Building Type**	Single family	11	**Number of Dwelling Units**	1
12	**Project Scope**	Newly Constructed	13	**Number of Bedrooms**	2
14	**Addition Cond. Floor Area (ft^2)**	0	15	**Number of Stories**	1
16	**Existing Cond. Floor Area (ft^2)**	n/a	17	**Fenestration Average U-factor**	0.3
18	**Total Cond. Floor Area (ft^2)**	900	19	**Glazing Percentage (%)**	11.67%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Fuel Type**	All electric	23	**No Dwelling Unit:**	No

COMPLIANCE RESULTS	
01	**Building Complies with Computer Performance**
02	**This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.**
03	**This building incorporates one or more Special Features shown below**

ENERGY DESIGN RATINGS

	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	31.1	41.2	27.9			
Proposed Design	28.9	40.2	27.3	2.2	1	0.6
RESULT[3]: PASS						

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 2.08 kWdc
- PV System resized to 2.08 kWdc (a factor of 2.084) to achieve Standard Design PV PV scaling

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.96	4.47	1.22	8.95	-0.26	-4.48
Space Cooling	1.76	34.87	1.44	34.25	0.32	0.62
IAQ Ventilation	0.42	4.43	0.42	4.43	0	0
Water Heating	2.34	23.76	1.61	18.25	0.73	5.51
Self Utilization/Flexibility Credit			0	0	0	0
Efficiency Compliance Total	**5.48**	**67.53**	**4.69**	**65.88**	**0.79**	**1.65**
Photovoltaics	-2.65	-74.55	-2.65	-74.55		
Battery			0	0		
Flexibility			0			
Indoor Lighting	0.89	8.63	0.89	8.63		
Appl. & Cooking	2.36	26.51	2.35	26.37		
Plug Loads	5.05	51.6	5.05	51.6		
Outdoor Lighting	0.2	1.82	0.2	1.82		
TOTAL COMPLIANCE	**11.33**	**81.58**	**10.53**	**79.75**		

ENERGY USE INTENSITY

	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Compliance Margin (kBtu/ft^2 - yr)	Margin Percentage
Gross EUI[1]	18.47	17.52	0.95	5.14
Net EUI[2]	5	4.05	0.95	19

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	**Exception**	**Module Type**	**Array Type**	**Power Electronics**	**CFI**	**Azimuth (deg)**	**Tilt Input**	**Array Angle (deg)**	**Tilt: (x in 12)**	**Inverter Eff. (%)**	**Annual Solar Access (%)**
2.08	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Indoor air quality ventilation
- Kitchen range hood
- Verified heat pump rated heating capacity

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft^2)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
REMODEL HOUSE	900	1	2	1	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft^2)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
HOUSE	Conditioned	HVAC System1	900	8	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft^2)**	**Window and Door Area (ft2)**	**Tilt (deg)**
Front Wall	HOUSE	R-21 Wall	270	Front	320	53	90
Left Wall	HOUSE	R-21 Wall	0	Left	224	18	90
Rear Wall	HOUSE	R-21 Wall	90	Back	320	0	90
Right Wall	HOUSE	R-21 Wall	180	Right	224	72	90
Raised Floor	HOUSE	R-19 Floor Crawlspace	n/a	n/a	900	n/a	n/a

OPAQUE SURFACES - CATHEDRAL CEILINGS

01	02	03	04	05	06	07	08	09	10	11
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Area (ft^2)**	**Skylight Area (ft^2)**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Cool Roof**
Roof	HOUSE	R-30 Roof No Attic	180	Right	900	0	4	0.1	0.85	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Width (ft)**	**Height (ft)**	**Mult.**	**Area (ft^2)**	**U-factor**	**U-factor Source**	**SHGC**	**SHGC Source**	**Exterior Shading**
FRONT Window	Window	Front Wall	Front	270			1	33	0.3	NFRC	0.23	NFRC	Bug Screen
RIGHT WINDOWS	Window	Right Wall	Right	180			1	18	0.3	NFRC	0.23	NFRC	Bug Screen
SLIDING DOOR 8068	Window	Right Wall	Right	180			1	54	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE DOORS

01	02	03	04
Name	**Side of Building**	**Area (ft^2)**	**U-factor**
Door 3068	Front Wall	20	0.2
Door 2868	Left Wall	18	0.2

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	**Surface Type**	**Construction Type**	**Framing**	**Total Cavity R-value**	**Interior / Exterior Continuous R-value**	**U-factor**	**Assembly Layers**
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	5 / None	0.048	Inside Finish: Gypsum Board Sheathing / Insulation: R-5 Sheathing Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	**Surface Type**	**Construction Type**	**Framing**	**Total Cavity R-value**	**Interior / Exterior Continuous R-value**	**U-factor**	**Assembly Layers**
R-30 Roof No Attic	Cathedral Ceilings	Wood Framed Ceiling	2x6 @ 16 in. O. C.	R-30	13 / None	0.024	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Radiant Barrier Cavity / Frame: R-30 / 2x6 Sheathing / Insulation: R-13 Sheathing Inside Finish: Gypsum Board
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x10 @ 16 in. O. C.	R-19	None / None	0.046	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x10

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	**High R-value Spray Foam Insulation**	**Building Envelope Air Leakage**	**CFM50**	**CFM50**
Not Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	**System Type**	**Distribution Type**	**Water Heater Name**	**Number of Units**	**Solar Heating System**	**Compact Distribution**	**HERS Verification**	**Water Heater Name (#)**
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	**# of Units**	**Tank Vol. (gal)**	**NEEA Heat Pump Brand**	**NEEA Heat Pump Model**	**Tank Location**	**Duct Inlet Air Source**	**Duct Outlet Air Source**
DHW Heater 1	1	50	Rheem	PROH50 T2 RH310BM (50 gal, JA13I)	Outside	HOUSE	HOUSE

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07
Name	**Pipe Insulation**	**Parallel Piping**	**Compact Distribution**	**Compact Distribution Type**	**Recirculation Control**	**Shower Drain Water Heat Recovery**
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	**System Type**	**Heating Unit Name**	**Heating Equipment Count**	**Cooling Unit Name**	**Cooling Equipment Count**	**Fan Name**	**Distribution Name**	**Required Thermostat Type**
HVAC System1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	n/a	n/a	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
			Heating				Cooling					
Name	**System Type**	**Number of Units**	**Heating Efficiency Type**	**HSPF/H5 PF2/COP**	**Cap 47**	**Cap 17**	**Cooling Efficiency Type**	**SEER/SEER2**	**EER/EER 2/CEER**	**Zonally Controlled**	**Compressor Type**	**HERS Verification**
Heat Pump System 1	Ductless MiniSplit HP	1	HSPF	9.5	24000	22125	EERSEER	17	9	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	**Verified Airflow**	**Airflow Target**	**Verified EER/EER2**	**Verified SEER/SEER2**	**Verified Refrigerant Charge**	**Verified HSPF/HSPF2**	**Verified Heating Cap 47**	**Verified Heating Cap 17**
Heat Pump System 1-hers-htpump	Not Required	0	Not Required	Not Required	No	No	Yes	Yes

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	**Airflow (CFM)**	**Fan Efficacy (W/CFM)**	**IAQ Fan Type**	**Includes Heat/Energy Recovery?**	**IAQ Recovery Effectiveness - SRE/ASRE**	**Includes Fault Indicator Display?**	**HERS Verification**	**Status**
SFam IAQVentRpt	49	0.35	Exhaust	No	n/a / n/a	No	Yes	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Lei Huang	Documentation Author Signature: *Lei Huang*
Company: Ray Drafting	Signature Date: 2024-07-04 08:53:22
Address: 1619 Golden Gate Ave	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: Chula Vista, CA 91913	Phone: 858-380-6125

RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: 1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance. 2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
Responsible Designer Name: Lei Huang	Responsible Designer Signature: *Lei Huang*
Company: Ray Drafting	Date Signed: 2024-07-04 08:53:22
Address: 1619 Golden Gate Ave	License: 074599
City/State/Zip: Chula Vista, CA 91913	Phone: 858-380-6125

GENERAL STRUCTURAL NOTES

GENERAL

1. CONTRACTORS AT THE JOB SITE, AND SHALL BE RESPONSIBLE FOR CONDITIONS OF ALL WORK AND MATERIALS INCLUDING THOSE FURNISHED BY SUB-CONTRACTORS. STRUCTURAL ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
2. ALL MATERIALS AND WORKMANSHIP SHALL BE PERFORMED IN ACCORDANCE WITH 2022 CALIFORNIA BUILDING CODE.
3. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS.
4. NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
5. WHERE NO DETAILS SHOWN OR NOTED ON THE DRAWINGS, THE DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
6. OPENINGS, POCKETS, SLEEVES, ETC., SHALL NOT BE PLACED IN SLABS, BEAMS, WALLS, COLUMNS AND FOOTINGS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.
7. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOADS SHALL NOT EXCEED DESIGN LIVE LOADS FOR EACH PARTICULAR LEVEL. PROVIDE ADEQUATE SHORING AND BRACING IF LOAD EXCEED DESIGN LIVE LOAD OR WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
8. THIS SET OF DRAWINGS REPRESENT THE FINISHED STRUCTURE, METHOD OF CONSTRUCTION NOT NECESSARY INDICATED, THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO BRACING, SHORING, SCAFFOLDING, ETC.

STRUCTURAL DESIGN CRITERIA

1. NO SOILS REPORT:
   ASSUME SOILS BEARING PRESSURE = 1,500 p.s.f.
   FOUNDATION DESIGN SHALL BE 18" MIN. DEPTH OF FOOTING BELOW LOWEST ADJACENT FINISH GRADE. AND 12" MIN. WIDTH FOR 1ST STORY

2. DESIGN LOADS:

	DEAD (PSF)	LIVE (PSF)
ROOF	15	20

3. LATERAL LOADS

WIND DESIGN DATA:

BASIC WIND SPEED	96 MPH
IMPORTANCE FACTOR I	1.0
OCCUPANCY CATEGORY	II
WIND EXPOSURE	B

EARTHQUAKE DESIGN DATA:

IMPORTANCE FACTOR I	1.0
SITE CLASS	D (ASSUME STIFF SOIL PROFILE)
Ss	0.946
S1	0.345
SDs	0.757
SD1	0.450
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE-RESISTING SYSTEM	15-WOOD STRUCTURAL PANEL (ASCE 7-16 TABLE 12.2-1)
DESIGN BASE SHEAR	0.7V=0.082*W (ASD LEVEL)
Cs	0.116
R	6.5

USE EQUIVALENT LATERAL FORCE PROCEDURE

4. LUMBER GRAGES (U.N.O)
   6X & 8X POSTS /BEAMS /HEADRES: DFL#1
   4X POSTS /BEAMS/ HEADERS: DFL #2
   2X JOISTS /RAFTERS: DFL #2
   STUDS: DFL #2
   TOP PLATES & MUD SILLS: DFL CONSTRUCTION GRADE OR BETTER
   SEE STRUCTURAL WOOD NOTE #11 FOR ADDITIONAL MUD SILL REQUIREMENTS

5. THE FOLLOW BEAMS/ HEADERS/ RIMS CAN BE FROM ANY MANUFACTURER WITH CURRENT ICC ES-EVALUATION REPORT WITH THE FOLLOWING MECHANICAL PROPERTIES:
   FOR "FSL" BEAM / HEADERS:
   3½" & WIDER: Fb = 2900 PSI (MIN.), Fv = 290 PSI (MIN.) E = 2.9 X 10^6PSI (MIN.)
   1¾" & 2⅝": Fb = 2900 PSI (MIN.), Fv = 290 PSI (MIN.) E = 2.9 X 10 PSI (MIN.)

REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL BE AS FOLLOWS
   A. NO. 4 BARS AND SMALLER – INTERMEDIATE GRADE CONFORMING TO A615-40
   B. NO. 5 BARS AND LARGER – HARD GRADE CONFORMING TO A615-60
   C. ALL MASONRY WALL REINFORCING, INCLUDING MASONRY WALL FOOTINGS, SHALL BE INTERMEDIATE GRADE CONFORMING TO A615-60
   D. ALL BARS EXCEPT NO. 2 BARS SHALL BE DEFORMED AS PER ASTM A305
   E. WIRE MESH SHALL CONFORM TO ASTM A185
   F. REBARS TO BE WELDED SHALL BE CONFORMING TO ASTM A-706, GRADE 60
2. GRADE 60 BARS SHALL BE MARKED SO ITS IDENTIFICATION CAN BE MADE WHEN THE FINAL IN PLACE INSPECTION IS MADE.
3. REINFORCING STEEL AT THE TIME OF THE CONCRETE IS PLACED SHALL BE FREE FROM MUD, OIL, OR OTHER NON METALLIC COATINGS THAT ADVERSELY AFFECT BONDING CAPACITY.
4. BAR SUPPORTS SHALL CONFORM TO THE BAR SUPPORT SPECIFICATIONS CONTAINED IN THE "MANUAL OF STANDARD PRACTICE" BY ACI.
5. A CERTIFIED COPY OF MILL TEST ON EACH HEAT OF REINFORCING STEEL DELIVERED SHOWING PHYSICAL AND CHEMICAL ANALYSIS SHALL BE PROVIDED UPON REQUEST AT THE TIME OF SHIPMENT.
6. ALL REQUIREMENT OF CONCRETE REINFORCEMENT NOT COVERED ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH ACI "MANUAL OF STANDARD PRACTICE".
7. BARS SHALL BE SECURELY TIED TO PREVENT DISPLACEMENT DURING THE CONCRETE OPERATION AND ALL DOWELS SHALL BE WIRED IN PLACE BEFORE DEPOSITING CONCRETE.
8. REINFORCING BARS SHALL CONFORM ACCURATELY TO THE DIMENSIONS SHOWN ON THE DRAWINGS WITH THE FABRICATING TOLERANCES PER ACI "MANUAL OF STANDARD PRACTICE."
9. REINFORCING BARS SHALL NOT BE BENT OR STRAIGHTENED IN A MANNER THAT WILL INJURE THE MATERIAL.

STRUCTURAL WOOD

MINMUM QUALITY

1. ALL STRUCTURAL WOOD SHALL BE DOUGLAS FIR LARCH SPECIES, (19% MAXIMUM MOISTURE CONTENT AT THE TIME OF CONSTRUCTION U.N.O)
2. ALL MACHINE BOLTS SHALL CONFORM TO ASTM A307. HOLES FOR BOLTS SHALL BE DRILLED 1/16" LARGER THAN BOLT DIAMETER.
3. FOR NON-SHEAR WALL APPLICATIONS, ROUND WASHERS SHALL BE USED ON ALL BOLTS AND SHOULD CONFORM WITH ANSI/ASME B 18.22.1. USE MIN. 1⅜" ø X 7/64" THICK WASHER FOR ½" ø BOLT, 1¾" ø X 9/64" THICK WASHER FOR ⅝" ø BOLT AND 2½"ø X 11/64" THICK WASHER FOR 1" ø BOLT. U.N.O.
4. ALL NAILS SHALL BE SINKER NAILS AND STAGGERD U.N.O., EXCEPT AS SHOWN ON NAILING SCHEDULE.
5. ADHESIVE USED TO ATTACH FLOOR SHEATHING TO FRAMING ELEMENT SHALL CONFORM WITH APA SPECIFICATION AFG-01
6. MANUFACTURED HARDWARE SPECIFIED ON THE DRAWNGS ARE TO BE SIMPSON STRONG TIE (UNLESS SPECIFICALLY AUTHORIZED IN WRITING BY E.O.R.. FOLLOW ALL MANUFACTURER'S & RECOMMENDATIONS FOR INSTALLATION & HANDLING OF THE PRODUCT.
7. DO NOT BEND THE SIMPSON PA STRAPS.

FRAMING:

8. ALL FRAMING, BRACING, NAILING, NOTCHING, DRILLING OR BORING SHALL BE ACCORDANCE WITH BUILDING CODE UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED OR REQUIRED BY THE LOCAL JURISDICTION.
9. FABRICATION AND HANDLING OF GLUE-LAM BEAMS SHALL BE PER ANSI/AITC A 190.1. STANDARD BEAMS TO BEAR LEGIBLE APA-ENS OR AITC GRADE STAMP. AN APA-EWS CRAN AITC CERTIFICATE OF CONFORMANCE FOR GLUED-LAMINATED MEMBERS SHOULD BE SUBMITTED TO THE FIELD INSPECTOR PRIOR TO INSTALLATION AND GLUE-LAM MEMBERS SHALL BE 24F-V4, DF/DF WITH STANDARD CAMBER ON ROOF BEAMS EXCEPT CANTILEVER END (U.N.O). ALL CANTILEVER ENDS AND FLOOR BEAMS SHALL HAVE ZERO CAMBER U.N.O. ALL BEAMS SHALL BE FABRICATED USING WATERPROOF GLUE.
10. FASTENERS IN CONTACT WITH PRESERVATIVE TREATED LUMBER AND FIRE RETARDANT TREATED WOOD SHALL BE OF HOT-DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS, SILICON BRONZE OR COPPER. EXCEPTION: PLAIN CARBON STEEL FASTENERS IN SBX/DOT AND ZINC BORATE PRESERVATIVE-TREATED WOOD IN AN INTERIOR, DRY ENVIRONMENT SHALL BE PERMITTED.
11. STUD WALLS PERPENDICULAR TO A CONCRETE OR MASONRY WALL SHALL BE BOLTED TO THE CONCRETE OR MASONRY WALL WITH ⅝" ø X 8" A307 BOLTS AT TOP, MID-HEIGHT AND BOTTOM.
12. STRUCTURAL INFORMATION SHOWN ON FRAMING PLANS IS FOR THE MAIN STRUCTURAL ELEMENTS. NON-STRUCTURAL ELEMENTS SHALL BE CONSTRUCTED PER APPROVED CODE REQUIREMENTS.
13. CONVENTIONAL LIGHT FRAMED CONSTRUCTION REQUIREMENTS OF CHAPTER 23 SHOULD BE FOLLOWED AS REQUIRED.
14. WEIGHT OF THE ROOF TILE IS CONSIDERED TO BE 10PSF MAX. (TOTAL ROOF DEAD LOAD OF 19 PSF). IF ROOFING MATERIAL EXCEEDS THIS LOAD, THE FRAMING CONTRACTOR SHOULD NOTIFY E.O.R. IN WRITING PRIOR TO CONSTRUCTION.
15. TOP PLATES OF ALL WOOD STUD WALLS TO CONSIST OF (2) 2x's THE SAME WIDTH AS THE STUDS U.N.O. TOP PLATE SHALL LAP A MIN. OF 48" AND BE SPLICES WITH NOT LESS THAN 6-16 NAILS SPACED NOT MORE THAN 12" O.C.
16. ALL SHEAR PANELS SHALL HAVE CONTINUOUS SHEATHING MATERIAL FROM ONE END TO THE OTHER AND FROM PLATE TO PLATE AS SPECIFIED ON THE DRAWINGS. CONTRACTOR SHALL COORDINATE FRAMING SUCH THAT CONTINUITY OF SHEAR PANELS IS ASSURED.
17. ALL LEDGERS SHALL BE SPLICES WITH ST22 STRAP, UNLESS NOTED OTHERWISE.
18. ALL SHEAR TRANSFER NAILING SHALL BE PER DRAWINGS, AND CONTRACTOR SHALL PROVIDE PROPER NOTIFICATION FOR INSPECTIONS TO REVIEW THE SAME.
19. PROVIDE POST/MULTIPLE STUDS AT LOWER FLOOR UNDER POST/MULTIPLE STUDS ABOVE. EACH POST/STUD SHALL BE FASTENED BY GYPSUM WALL BOARD w/5d COOLER NAILS @ 7" O.C. U.N.O ON PLAN. PROVIDE FULL WIDTH AND DEPTH COMPRESSION BLOCK BETWEEN FLOORS AS SUCH LOCATIONS.
20. ALL JOIST HANGERS SHALL BE SIMPSON U HANGER, ALL BEAM HANGERS SHALL BE SIMPSON HU HANGER U.N.O. ON PLAN OR DETAIL. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
21. IF A DOUBLE SILL PLATE IS USED AT LIGHT-WEIGHT CONCRETE FLOORING, THEN THE FRAMING CONTRACTOR SHALL APPLY SILL PLATE NAILING TO BOTH SILL PLATES, AT 16" O.C MAX. OR SPECIFIED PER SCHEDULE.
22. USE THIS SPAN TABLE FOR STUD SPACING (U.N.O)

SIZE. HEIGHT AND SPACING OF WOOD STUD								
BEARING WALLS							NON-BEARING/NON-SHEAR WALLS	
STUD SIZES	STUD HEIGHTS	5TH TO ROOF	4TH TO 5TH FL	3RD TO 4TH FL	2ND TO 3RD FL	1ST TO 2ND FL	STUD HEIGHTS	MAXIMUM SPACING
		INCHES	INCHES	INCHES	INCHES	INCHES	FEET	INCHES
2X4	10	16	12				14	24
3X4	10	24	24	16			14	24
2X6	10	24	24	16	16	16	20	24
2-2X4	10			16	12			
2-2X6	10			24	24	24		

* SHALL NOT BE USED IN EXTERIOR WALLS
** REFER TO PLANS FOR STUD HEIGHTS EXCEEDING THIS TABLE
*** FOR MAXIMUM SPACING AT SHEAR WALLS SEE S.W. SCHEDULE TABLE MOST RESTRICTIVE LIMIT SHALL GOVERNS

23. HEADERS: USE MINIMUM 4X4 FOR OPENINGS LESS THAN 16" AT BEARING WALLS WITHOUT POINT LOADS. FOR NON-BEARING WALLS USE 2X4 FOR OPENINGS UP TO 3'-0" MAX. USE (2) 2X4 FOR OPENING UP TO 6'-0" MAX. USE 4X6 FOR OPENINGS UP TO 12'-0" MAX. U.N.O (2-2X ON EDGE CAN BE SUBSTITUTED FOR 4X MEMBERS)
24. WOOD TRUSS MANUFACTURER SHALL SUPPLY TO THE ENGINEER AND THE BUILDING DEPARTMENT CALCULATIONS AND SHOP DRAWINGS FOR APPROVAL OF DESIGN LOADS, CONFIGURATION (2 OR 3 POINT BEARING), AND SHEAR TRANSFER, PRIOR TO FABRICATION. IT SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER TO OBTAIN BUILDING DEPARTMENT APPROVAL OF CALCULATIONS AND SHOP DRAWINGS PRIOR TO FABRICATION.
25. TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT BUILDING CODE FOR ALL LOADS IMPOSED, INCLUDING LATERAL LOADS AND MECHANICAL EQUIPMENT LOADS.

CEILING JOIST

26. USE THIS SPAN TABLE FOR CEILING JOISTS GIVEN THE FOLLOW CONDITIONS (U.N.O. ON PLANS)
   A) DEAD LOAD = 6 PSF
   B) LIVE LOAD = 10 PSF
   C) TOTAL DEFLECTION = L/240
   D) WITH ONE LAYER DRYWALL
   E) USE DFL#2

2X4		2X6		2X8	
SPACING	MAX. SPAN	SPACING	MAX. SPAN	SPACING	MAX. SPAN
12"	9'-10"	12"	16'-0"	12"	20'-5"
16"	8'-10"	16"	14'-5"	16"	18'-4"
24"	7'-7"	24"	12'-6"	24"	15'-9"

FASTENING SCHEDULE (2022 CBC TABLE 2304.10.1)

	ELEMENT / CONNECTION	FASTENERS	LOCATION
	ROOF		
1	BLOCKING BETWEEN CEILING JOIST, RAFTERS OR TRUSSES TO TOP PLATE OR OTHER FRAMING BELOW	3-8d	TOENAIL EA. END
	BLOCKING BETWEEN RAFTERS OR TRUSS NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS	2-8d	TOENAIL EA. END
		2-16d	EA. END
	FLAT BLOCKING TO TOP PLATE	16d @ 6" O.C	FACE NAIL
2	CEILING JOISTS TO TOP PLATE	3-8d	TOENAIL EA. JOIST
3	CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS	3-16d	FACE NAIL
4	CEILING JOISTS ATTACHED TO PARALLEL RAFTER	TABLE 2308.7.3.1	FACE NAIL
5	COLLAR TIE TO RAFTER	3-10d	FACE NAIL
6	RAFTER OR ROOF TRUSS TO TOP PLATE	3-10d	TOENAIL[3]
7	ROOF RAFTERS TO RIDGE VALLEY OR HIP RAFTERS, OR ROOF RAFTER TO 2" RIDGE VEAM	2-16d	END NAIL
		3-10d	TOENAIL
	WALL		
8	STUD TO STUD	16d	24" O.C FACENAIL
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS	16d	16" O.C FACENAIL
10	BUILT-UP HEADER	16d	16" O.C FACENAIL
11	CONTINUOUS HEADER TO STUD	4-8d	TOENAIL
12	TOP PLATE TO TOP PLATE	16d	16" O.C FACENAIL
13	TOP PLATE TO TOP PLATE, AT END JOISTS	8-16d	ED. SIDE OF END JOINT, FACE NAIL
14	BOTTOM PLATE TO JOIST, RIM JOIST, BEND JOIST OR BLOCKING	16d	16" O.C FACENAIL
15	BOTTOM PLATE TO JOIST, RIM JOIST, BEND JOIST OR BLOCKING AT BRACED WALL PLATES	2-16d	16" O.C FACENAIL
16	STUD TO TOP OR BOTTOM PLATE	4-8d	TOENAIL
		2-16d	END NAIL
17	TOP OR BOTTOM PLATE TO STUD	2-16d	FACE NAIL
18	TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	2-16d	FACE NAIL
19	1" BRACE TO EACH STUD AND PLATE	2-8d	FACE NAIL
20	1'X6' SHEATHING TO EACH BEARING	2-8d	FACE NAIL
21	1'X6' SHEATHING TO EACH BEARING	2-8d	FACE NAIL
	FLOOR		
22	JOIST TO SILL, TOP PLATE, OR GIRDER	3-8d	TOENAIL
23	RIM JOIST, BAND JOIST, OR BLOCKING TO TOP PLATE, SILL OR OTHER FRAMING BELOW	8d	6" O.C TOENAIL
24	1'X6' SUBFLOOR OR LESS TO EACH JOIST	2-8d	FACE NAIL
25	2" SUBFLOOR TO JOIST OR GIRDER	2-16d	FACE NAIL
26	2" PLANK	2-16d	EA. BEARING, FACE NAIL
27	BUILT UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	20d	32" O.C FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
28	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	3-16d	EA. JOIST OR RAFTER, FACE NAIL
29	JOIST TO BAND JOIST OR RIM JOIST	3-16d	END NAIL
30	BRIDGING OR BLOCKING TO JOIST, RAFTER OR TRUSS	2-8d	EA. END TOENAIL
	WOOD STRUCTURAL PANLES, SUB FLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING AND PARTICLEBOARD WALL SHEATHING TO FRAMING[1]		
31	⅜" – ½"	6d	6" EDGE 12" INTERMEDIATE SUPPORTS
32	19/32" – ¾"	8d	
33	⅞" – 1¼"	10d	
	OTHER EXTERIOR WALL SHEATHING		
34	½" FIBERBOARD SHEATHING	1 ½" GALVANIZED ROOF NAIL	3" EDGE 6" INTERMEDIATE SUPPORTS
35	25/32" FIBERBOARD SHEATHING	1 ½" GALVANIZED ROOF NAIL	
	WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING		
36	¾" AND LESS	8d	6" EDGE 12" INTERMEDIATE SUPPORTS
37	⅞" -1"	8d	
38	1 ⅛" – 1 ¼"	10d	
	PANEL SIDING TO FRAMING		
39	½" OR LESS		6" EDGE 12" INTERMEDIATE SUPPORTS
40	⅝"		
	INTERIOR PANELING		
41	¼"		6" EDGE 12" INTERMEDIATE SUPPORTS
42	⅜"		

1. NAILS SPACED AT 6" AT INTERMEDIATE SUPPORTS WHERE SPANS ARE 48" OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS. REFER TO SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
2. SPACING SHALL BE 6" O.C ON THE EDGES AND 12" O.C AT INTERMIDATE SUPPORTS FOR NONSTRUCTURAL APPLICATIONS. PANELS SUPPORTS AT 16" (20" IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL. UNLESS OTHERWISE MARKED).
3. WHERE A RAFTER IS FASTENED TO AN ADJACENT PARALLEL CEILING JOIST IN ACCORDANCE WITH THIS SCHEDULE AND THE CEILING JOIST IS FASTENED TO THE TOP PALTE IN ACCORDANCE WITH THIS SCHEDULE. THE NUMBER OF TOENAILS IN THE RAFTERS SHALL BE PERMITTED TO BE REDUCED BY ON NAIL.
4. FASTENERS FOR PRESERVATIVE-TREATED OR FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL IN ACCORDANCE WITH ASTM A153.

FOUNDATION

1. ALL CONTINUOUS FOOTINGS TO HAVE ⅝" ø X MIN. 12" ANCHOR BOLTS, MIN. 7" EMBEDMENT IN TO CONCRETE FOOTING AT 72" O.C. UNLESS NOTED OTHERWISE ON PLANS. ONE ANCHOR BOLT SHOULD BE LOCATED MAX. 12" AWAY AND MIN. 9 ½" FROM THE END OF THE SILL PLATES. MIN. (2) A.Bs. PER SILL PLATE/SHEAR PANEL. SILL PLATE UNDER SHEAR WALLS OF UP TO 4'-0" IN LENGTH MUST BE CONTINUOUS. SEE NOTE 2 FOR SILL PLATE FASTENERS AT INTERIOR NON-SHEAR WALLS.
   1a. ANCHOR BOLTS AT SHEAR WALLS SHALL BE INSTALLED WITH PLATE WASHERS OF MIN. 3" sq. X 0.229" THICK BETWEEN SILL PLATE AND NUT. EDGE(S) OF PLATE WASHERS SHALL BE ½" MAX. FROM INSIDE FACE OF SHEAR PANEL(S).
   1b. THE HOLE IN THE PLATE WASHER IS PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO ⅜" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXEED 1 ¾", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT.
2. FOR INTERIOR NON-SHEAR WALLS, USE SIMPSON PDPAWL SERIES 0.157" ø PINS WITH A PENETRATION OF ⅜" INTO SLAB AT 16" O.C. TO BE INSTALLED IN ACCORDANCE WITH ICC ESR-2138. ACTUAL SLAB THICKNESS TO BE MINIMUM 4". ALL INTERIOR SHEAR WALLS TO HAVE A.Bs. PER FOUNDATION PLAN.
3. ALL HOLDOWNS AND POST ANCHORS TO BE INSTALLED ACCORDING TO MOST CURRENT SIMPSON STRONG TIE SPECIFICATIONS AND REQUIREMENTS OF ICC-ER REPORTS & SHALL BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION. DIMENSIONS ARE NOT FURNISHED TO SIMPSON HOLDOWNS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SUPERINTENDENT, THE FRAMING CONTRACTOR AND THE CONCRETE CONTRACTOR TO LOCATE THESE ANCHORS IN THE EXACT LOCATION. REFER TO DETAILS FOR PROPER INSTALLATION.
4. MIN. CONCRETE WIDTH TO BE 8" FOR RECEIVING PA, HPA, & STHD's. VERIFY LOCATIONS OF HOLDOWNS AND ANCHOR BOLTS WITH ROUGH FRAMING TO ASSURE ACCURATE INSTALLATION.
5. PROVIDE #3 X 24" DOWELS AT 24" O.C AND 12" FROM THE CORNER AT ALL CONCRETE STOOPS AND PORCHES.
6. PROVIDE MIN. (1) #4 REINFORCING FOR ELECTRICAL GROUND, LOCATION TO BE VERIFIED WITH THE ELECTRICAL CONTRACTOR.
7. VERIFY MIN. FOUNDATION DEPTH, WIDTH, REINFORCING STEEL AND ADDITIONAL EXPANSIVE SOIL REQUIREMENTS WITH VALID SOILS REPORT (IF IT HAS) AND IF MORE STRINGENT. THEY SHALL SUPERSEDE THE ABOVE MINIMUM REQUIREMENTS.
8. ADMIXTURES IN CONCRETE MIX. CONTAINING CALCIUM CHLORIDES SHALL NO BE USED.
9. CONCRETE SHALL BE TO THE STRENGTH AND SLUMP AS SPECIFIED PER STRUCTURAL DESIGN, AND CONSIST OF PORTLAND CEMENT ASTM C-150 TYPE V PER SOILS ENGINEER'S RECOMMENDATIONS AND BUILDING CODESECTION 1904 (ACI 138 SECTION 19.3.2) WHEN EXPOSED TO SULFATE CONTAINING SOLUTIONS. AGGREGATES SHALL BE PER ASTM C-33. WATER TO BE CLEAN AND POTABLE.
10. WAITING PERIOD FOR CONCRETE SLABS-ON-GRADE PRIOR TO START OF CONSTRUCTION IS AS FOLLOWS:
    a. DO NOT WALK ON SLAB UNTIL 24 HOURS AFTER CONCRETE HAS BEEN POURED.
    b. BEGIN WALL FRAMING 4-5 DAYS AFTER CONCRETE POURED.
    c. BEGIN ROOF/FLOOR FRAMING 7-10 DAYS AFTER CONCRETE POURED.
    d. DO NOT LOAD ROOF PRIOR TO 14 DAYS AFTER CONCRETE POURED.
11. NO PIPES OR CONDUITS SHALL EXTEND UNDER ISOLATED COLUMN FOOTING OR UNDER CONTINUOUS WALL FOOTINGS UNLESS SPECIFICALLY DETAILED OR APPROVED BY THE ARCHITECT, STRUCTURAL ENGINEER AND THE BUILDING OFFICIAL.
12. CONTRACTOR SHALL PROVIDE TEMPORARY AND PERMANENT DEWATERING FOR EITHER SURFACE WATER, GROUND WATER OR SEEPAGE WATER
13. CONTRACTOR SHALL PROTECT ALL UTILITY LINES, ETC. ENCOUNTERED DURING EXCAVATIONS AND BACKFILLING.
14. CONTRACTOR SHALL PROVIDE AND INSTALL ALL CRIBBING SHEATHING AND SHORING REQUIRED TO SAFELY RETAIN THE EARTH BANK.
15. FOOTING BACKFILL AND UTILITY TRENCH BACKFILL SHALL BE PROPERLY COMPACTED.
16. NO VERTICAL EXCAVATIONS 4'-0" OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESEND SHALL BE PERMITTED.
17. EXCAVATION FOR ANY PURPOSE SHALL NOT REMOVE LATERAL SUPPORT FROM ANY FOUNDATION WITHOUT FIRST UNDERPINNING OR PROTECTING THE FOUNDATION AGAINST SETTLEMENT OR LATERAL TRANSLATION. (2019 CBC, 1804.1)
18. THE EXCAVATION OUTSIDE THE FOUNDATION SHALL BE BACKFILL WITH SOIL THAT IS FREE OF ORGANIC MATERIAL, CONSTRUCTION DEBRIS COBBLES AND BOULDERS OR WITH A CONTROLLED LOW-STRENGTH MATERIAL (CLSM). THE BACKFILL SHALL BE PLACED IN LIFTS AND COMPACTED IN A MANNER THAT DOES NOT DAMAGE THE FOUNDATION OR THE WATERPROOFING OR DAMPPROOFING MATERIAL. (2022 CBC, 1804.2)

CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT CONFORMING TO THE FOLLOWING:

LOCATION	28-DAY MIN. COMPRESSIVE STRENGTH	MAXIMUM AGGREGATE SIZE (IN.)	MIX DESIGN SLUMP (INCHES)
A. SLAB ON GRADE	2500 psi	1	3 (4" MAX)
B. FOOTING	2500 psi*	1	4 (5" MAX)

   * W/5.25 SACKS CEMENT (MIN.)
   * WHERE SULFATE EXPOSURE LEVEL IS SEVERE USE 5000 psi WITH W/C RATIO OF 0.45 (MAX) W/5.5 SACKS CEMENT (MIN.) FOR 5000 PSI
2. ALL SAW CUTS IN SLAB ON GRADE SHALL BE MADE NOT LATER THAN 24 HOURS AFTER PLACING CONCRETE.
3. PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, TYPE II CEMENT.
4. AGGREGATE SHALL CONFORM TO ASTM C-33.
5. WATER SHALL BE CLEAN, FREE FROM DELETERIOUS AMOUNTS OF ACIDS, ALKALIS OR ORGANIC MATERIALS. OILS, SALTS AS PER ACI 318.
6. CONCRETE MIXING OPERATIONS, ETC. SHALL CONFORM TO ASTM C-94. WATER-CEMENT RATIO IS LESS THAN 0.50
7. UNLESS SHOWN OR NOTED OTHERWISE, CONCRETE COVERAGE FOR

A. CONCRETE IN CONTACT WITH EARTH, UNFORMED	3"
B. CONCRETE IN CONTACT WITH EARTH, FORMED	2"
C. WALLS	1.5"
D. BEAMS, GIRDERS & COLUMNS (TO TIES OR STIRRUPS)	1.5"

8. CONCRETE SHALL BE CURED IN ACCORDANCE WITH SECT 5.11 OF ACI 318-11.
9. CONSTRUCTION JOINTS:
   THE SURFACES OF ALL CONSTRUCTION JOINTS SHALL BE CLEAN, FREE FROM LOOSE DEBRIS. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.

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08/13/2024

REBUILD HOUSE

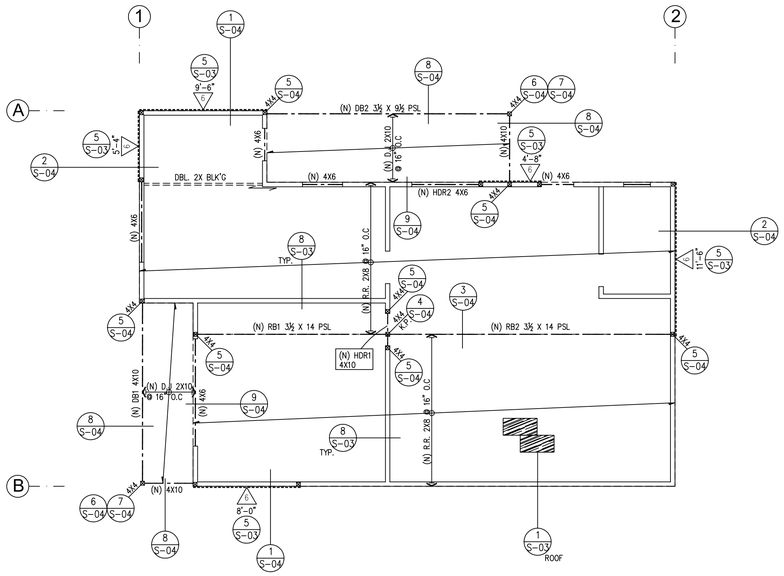
GENERAL NOTES

△ _____
△ _____
△ _____
△ _____

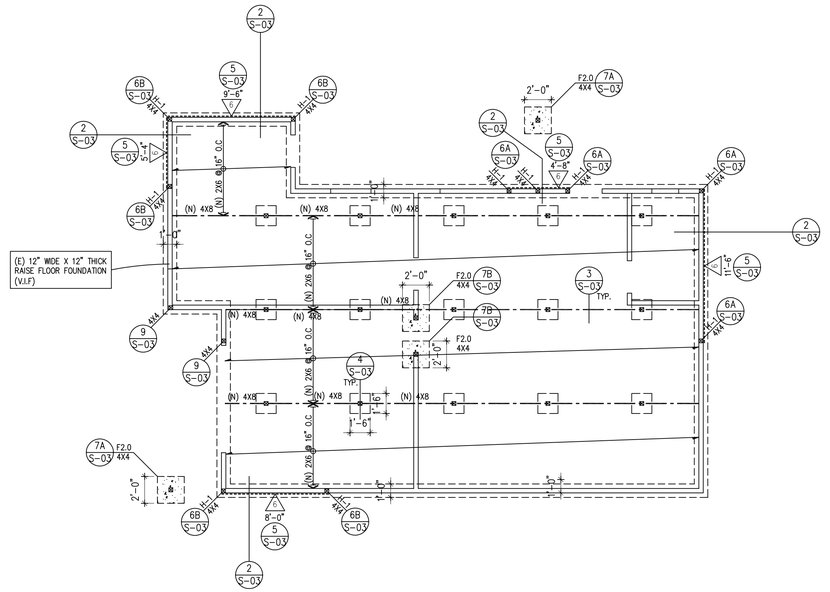
DRAWN BY: X.Q
PROJECT NO. 24112

ISSUE DATE:
08-12-2024

S-01



ROOF FRAMING PLAN
SCALE: 3/16"=1'-0"



FOUNDATION PLAN
SCALE: 3/16"=1'-0"

Y-Y
X-X

SYMBOLS LEGEND

INDICATES EXISTING WALL STUD 2X4 @ 16" O.C

INDICATES SHEAR WALL HOLDOWN PER SCHEDULE W/4X4 WOOD POST (U.N.O) — 6/S-03

INDICATES (E) 12" WIDE X 12" THICK RAISED FLOOR FOOTING

4 3'-0" — INDICATES SHEAR WALL MARK FROM THIS LEVEL TO LEVEL ABOVE PER SHEAR WALL SCHEDULE ON 5/S-03. NON-SHEAR PLYWOOD ADJACENT TO SHEAR PANELS IN ORDER TO PROVIDE A FLUSH FINISH.
INDICATES SHEAR WALL PANEL APPROX. MIN. LENGTH IF NOT SHOWN, THEN PROVIDE PLYWOOD ON ENTIRE FACE.
PER DETAIL 5/S-03

F1.5 4X4 — SQ. FTG SIZE PER PLAN
WOOD POST PER PLAN
SQUARE PAD FOOTING 7/S-03

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No. C 96744
Exp. 12/31/24
CIVIL
STATE OF CALIFORNIA
08/13/2024

REBUILD HOUSE

ROOF FRAMING PLAN
FOUNDATION PLANS

△ _____
△ _____
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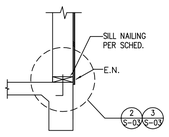
DRAWN BY: X.Q
PROJECT NO. 24112

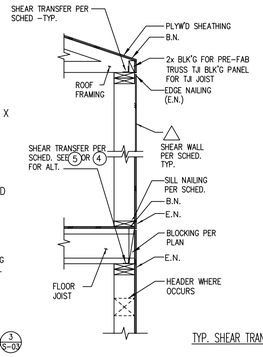
ISSUE DATE:
08-12-2024

S-02

NOTES:

ALL SUPPORTS FOR GYPBOARD TO BE NAILED COOLER NAILS.
PLYWOOD FIELD NAILING @ 12" O.C.
(1) EXTERIOR STUCCO WHERE OCCURS SHALL BE WOVEN OR WELDED WIRE LATH WITH ¾" PORTLAND CEMENT PLASTER WITH #11 GAUGE X 1 1/2" LONG X 7/16" DIA. HEAD NAILS OR #16 GAUGE X ¾" LONG LEG STAPLES @ 6" O.C
(2) (BLK'D) = ALL EDGES BLOCKED
CN = COOLER NAIL
N = COMMON NAIL
(3) MINIMUM OF (3) ⅝"DIA. ANCHORS PER SHEAR WALL. FOR SHEAR PANELS ON TWO SIDES OF WALL USE ONE-HALF THE ANCHOR BOLT, SILL NAILING AND TOE NAILING SPACING GIVEN IN THE SCHEDULE.
(4) A35 INDICATES "SIMPSON" A35 FRAMING ANCHOR.
(5) 2X STUDS
(6) 2X SILL

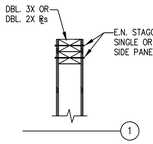


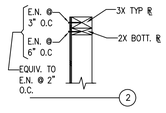


TYP. SHEAR TRANSFER

SHEAR WALL SCHEDULE

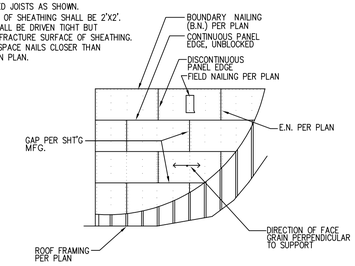
MARKS	SHEATHING MATERIAL (INDEX)	CAPACITY (PLF)	SPECIAL DETAIL	MINIMUM FRAMING UNLESS OTHERWISE NOTED							EDGE NAIL (E.N.)	FIELD NAIL (F.N.) (1)	ANCHOR BOLT (3)	SILL (4)(5) NAILING	ALTERNATE SILL LAG'S BOLTS (9)	SHEAR TRANSFER NAILING (6)
				TOP R.	BOTT R.	SILL R. TO CONC.	SILL R. TO WOOD	FIELD STUD	PANEL JOINT STUD	PANEL JOINT BLK'G						
6>	3/8" STRUCT I (24/0)	230	1	2x	2x	2x	2x	2x	2x	2x	8d @ 6" o.c	8d @ 12" o.c	5/8"ø A.B. x 12" @ 48" O.C.	16d @ 6" o.c	3/8"ø @ 16"	A35/LTP4 @ 16" O.C.
4>	3/8" STRUCT I (24/0)	361	1	2x	2x	3x	2x	2x	3x	3x	8d @ 4" o.c	8d @ 12" o.c	5/8"ø A.B. x 12" @ 32" O.C.	16d @ 4" o.c	3/8"ø @ 12"	A35/LTP4 @ 12" O.C.
3>	3/8" STRUCT I (24/0)	461	1	2x	2x	3x	2x	2x	3x	3x	8d @ 3" o.c	8d @ 12" o.c	5/8"ø A.B. x 12" @ 24" O.C.	16d @ 3" o.c	3/8"ø @ 10"	A35/LTP4 @ 8" O.C.
2>	3/8" STRUCT I (24/0)	611	2	3x	2x	3x	3x	2x	3x	3x	8d @ 2" o.c	8d @ 12" o.c	5/8"ø A.B. x 12" @ 16" O.C.	20d@2 1/4"o.c	3/8"ø @ 8"	A35/LTP4 @ 6" O.C.





SHEAR WALL SCHEDULE — 5

NOTE:
1. STAGGERED JOISTS AS SHOWN.
2. MIN. SIZE OF SHEATHING SHALL BE 2'X2'.
3. NAILS SHALL BE DRIVEN TIGHT BUT SHALL NOT FRACTURE SURFACE OF SHEATHING.
4. DO NOT SPACE NAILS CLOSER THAN SPECIFIED ON PLAN.

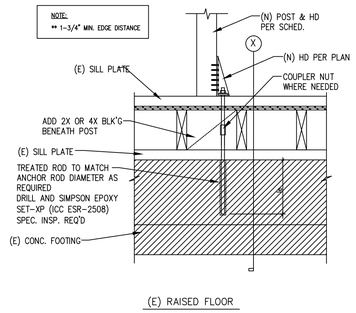


ROOF DIAPHRAGM (UNBLOCKED) — 1

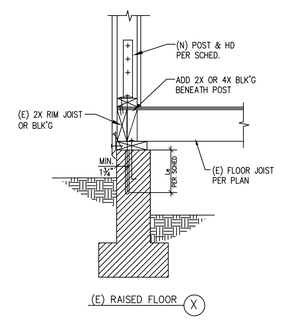
TYPE	PLYWOOD THICKNESS	NAIL SIZE	BOUNDARY	EDGE	FIELD	PANEL INDEX	SHEAR CAPACITY
ROOF	⅜" OSB	8d	6"	6"	12"	24/0	239

POST-INSTALLED HOLDOWN — 6

POST-INSTALLED BOLT (FOR MIN. 2500 PSI CONCRETE)				
	SIMPSON HOLDOWN	ANCHOR BOLT	MIN. EMBD.	MIN. POST SIZE
H-1	HDU2	⅝"ø F1554 GR. 36 ROD	12"	4X4
H-2	HDU4	⅝"ø F1554 GR. 36 ROD	12"	4X4

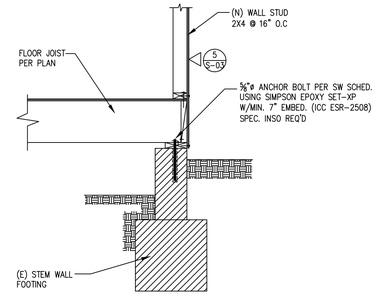


(E) RAISED FLOOR



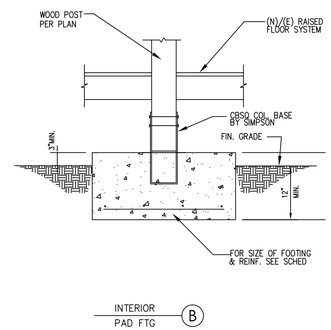
(E) RAISED FLOOR X

(E) WALL FOOTING – SHEAR TRANSFER — 2

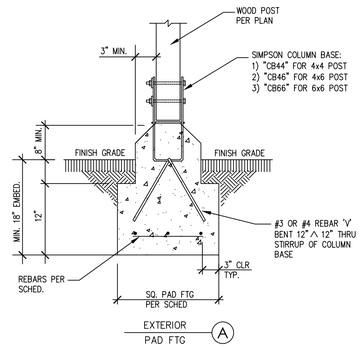


PAD FOOTING SCHEDULE

MARK	SIZE	"t"	REINFORCING STEEL	REMARKS
F1.5	1'-6" x 1'-6"	12"	(3) #4 @ BOTT. EA. WAY	
F2.0	2'-0" x 2'-0"	12"	(3) #4 @ BOTT. EA. WAY	
F2.5	2'-6" x 2'-6"	12"	(4) #4 @ BOTT. EA. WAY	
F3.0	3'-0" x 3'-0"	12"	(4) #4 @ BOTT. EA. WAY	

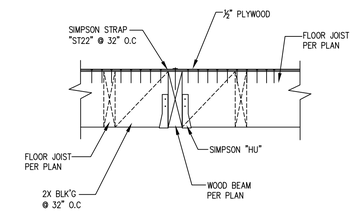


INTERIOR PAD FTG B

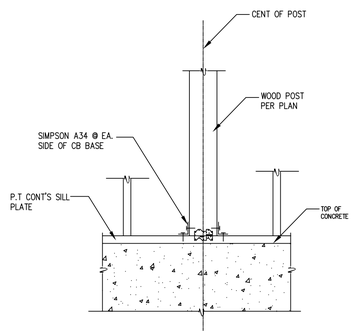


EXTERIOR PAD FTG A

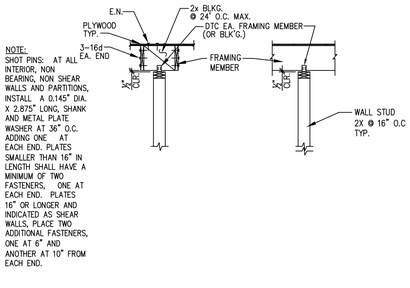
TYP. JOISTS CONN. — 3



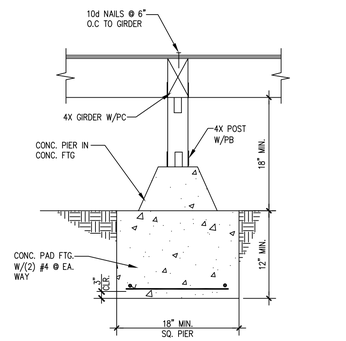
ISOLATED WOOD POST TO FOOTING — 7



WOOD POST ON SILL PLATE — 9



INTERIOR NON-BEARING WALL — 8



TYP. CONC. PIER — 4

PROJECT ADDRESS:
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EOR: XIN QIAN

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EMAIL: xin.qian@gmail.com

REGISTERED PROFESSIONAL ENGINEER XIN QIAN C 87671 EXP. 12/31/24 CIVIL STATE OF CALIFORNIA

08/13/2024

REBUILD HOUSE

FOUNDATION DETAILS

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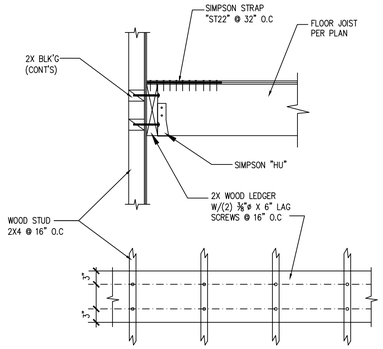
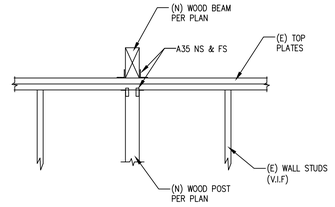
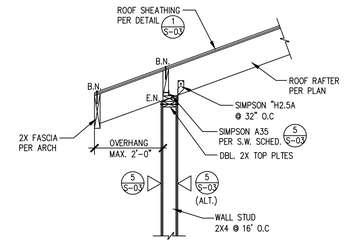


17 | 13 | WOOD LEDGER TO WOOD STUD | 9



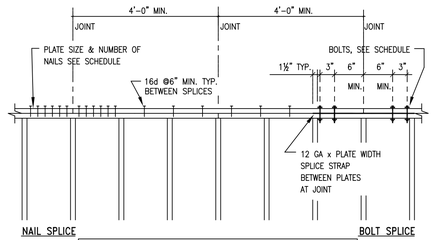
TYP. POST TO BEAM | 5



PERPENDICULAR TO EXT. WALL
NO CEILING

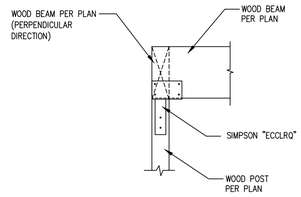
SHEAR TRANSFER-CONVENTIONAL ROOF | 1

18 | 14 | TOP PLATE SPLICE | 10

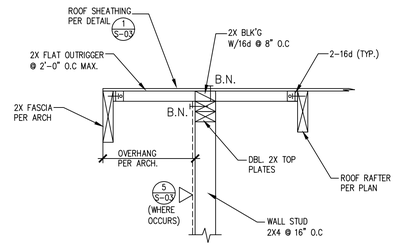


SCHEDULE		
TYPE	NO. NAILS OR BOLTS EACH SIDE OF JOINT	PLATE SIZE UNO
A	8 – 16d NAILS	2 – 2x
B	12 – 16d NAILS	2 – 2x
C	16 – 16d NAILS	2 – 2x
D	22 – 16d NAILS	2 – 2x
E	3 – 3/4" ø BOLTS OR MST60	2x 2x

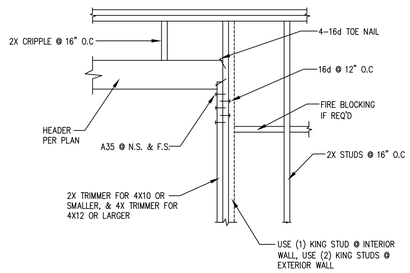
WOOD BEAM TO WOOD POST | 6



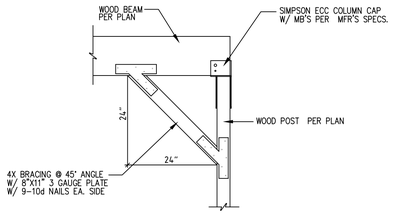
ROOF RAFTER AT EAVE | 2



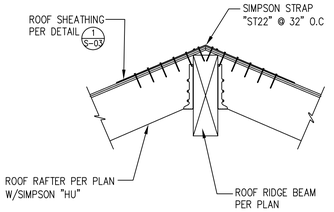
19 | 15 | DROPPED HEADER DETAIL | 11



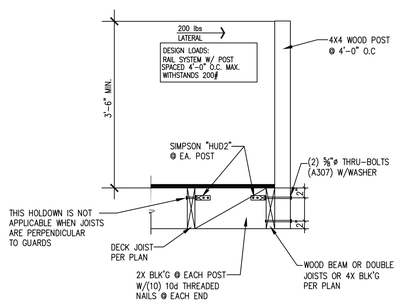
WOOD POST/BRACE (END) | 7



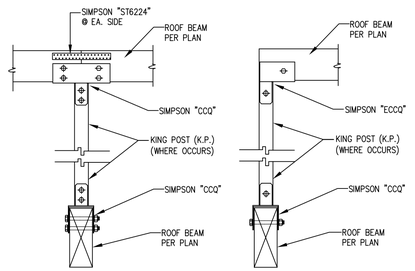
ROOF RIDGE BEAM | 3



20 | 16 | 12 | GUARDRAIL DETAIL (WOOD) | 8



AWPA (ALONG WOOD POST FROM ABOVE) POST | 4



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